

MITSUBISHI

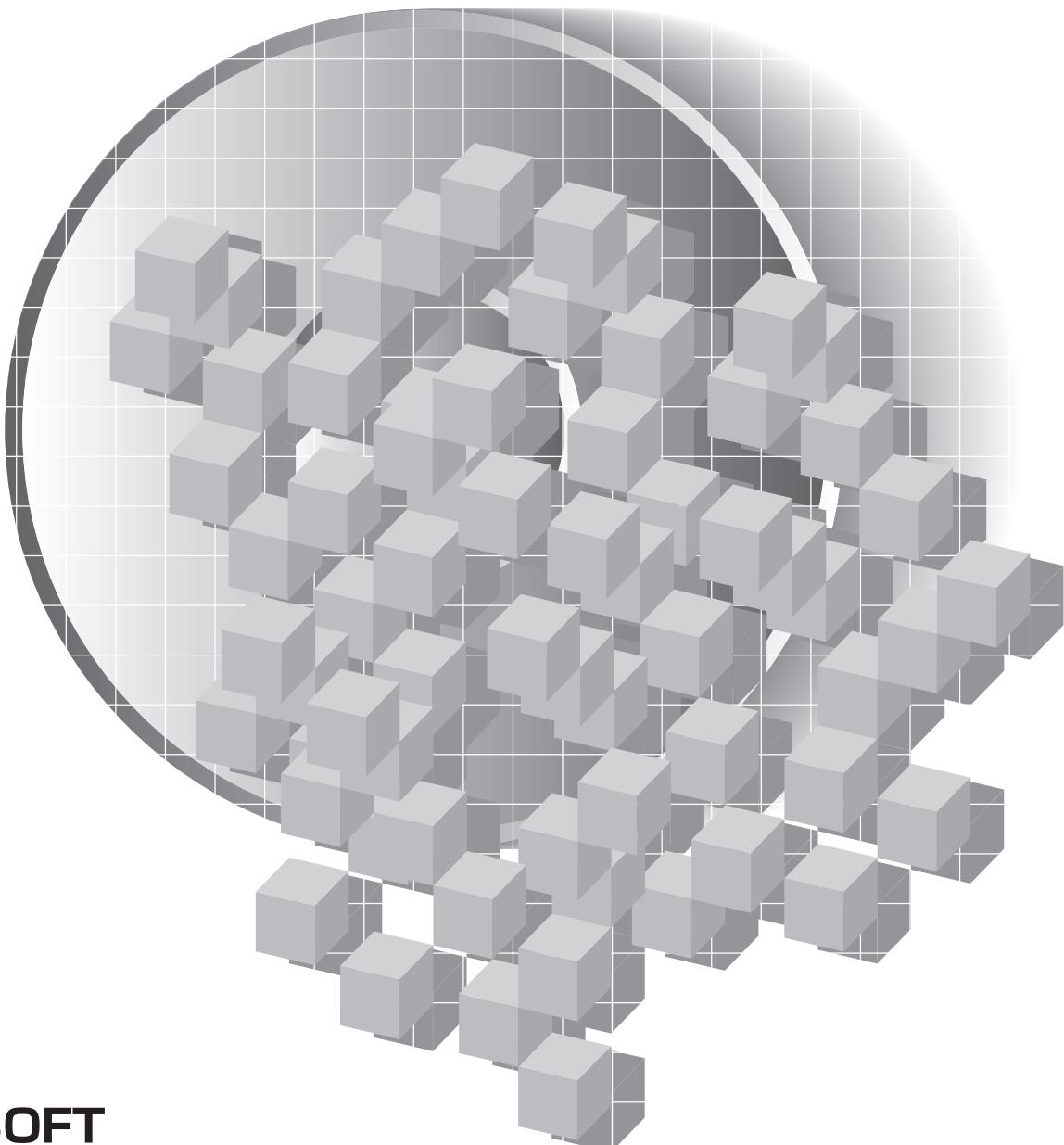


Integrated FA Software

GX LogViewer

Version 1

Operating Manual



MELSOFT
Integrated FA Software

■ SW1DNN-VIEWER-E

●SAFETY PRECAUTIONS●

(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.

In this manual, the safety precautions are classified into two levels: " WARNING" and " CAUTION".



Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.



Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under " CAUTION" may lead to serious consequences.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

●CONDITIONS OF USE FOR THE PRODUCT●

(1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;

- i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
- ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.

("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi representative in your region.

INTRODUCTION

Thank you for your patronage. We appreciate your purchase of the Mitsubishi integrated FA software, MELSOFT series.

This manual is designed for users to understand operations of GX LogViewer.

Before using the product, thoroughly read this manual and related manuals to develop full familiarity with the functions and performance of GX LogViewer and supported modules to ensure correct use.

RELATED MANUALS

The manuals related to this product are shown below.

Refer to the following tables when ordering required manuals.

Manual name < Manual number, model code >	Description
QCPU User's Manual (Hardware Design, Maintenance and Inspection) <SH-080483ENG, 13JR73>	Explains the specification of equipment such as CPU module, power supply module, ATA card, and battery, information required for system configuration, maintenance, and troubleshooting.
MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) <SH-080890ENG, 13JZ36>	Explains the specification of equipment such as CPU module, power supply module, display module, SD memory card, and battery, information required for system configuration, maintenance, and troubleshooting.
QnUDVCPU/LCPU Module User's Manual (Data Logging Function) <SH-080893ENG, 13JZ39>	Explains the specifications of the QnUDVCPU/LCPU module data logging function, and the method for using the QnUDVCPU & LCPU logging configuration tool.
High Speed Data Logger Module User's Manual <SH-080818ENG, 13JZ30>	Explains the specifications and operation methods of High Speed Data Logger Module (QD81DL96), and setting methods for sampling data/events.
High Speed Data Communication Module User's Manual <SH-081162ENG, 13JZ86>	Explains the specifications and operation methods of High Speed Data Communication Module (QJ71DC96), and setting methods for sampling data.
MELSEC-Q High Speed Analog-Digital Converter Module User's Manual <SH-080987ENG, 13JZ59>	Explains the specifications of MELSEC-Q High Speed Analog-Digital Converter Module (Q64ADH) data logging function.
MELSEC-Q Current Transformer Input Module User's Manual <SH-081033ENG, 13JZ66>	Explains the specifications of MELSEC-Q Current Transformer Input Module (Q68CT) data logging function.
MELSEC-L Analog-Digital Converter Module User's Manual <SH-080899ENG, 13JZ42>	Explains the specifications of MELSEC-L Analog-Digital Converter Module (L60AD4) data logging function.
MELSEC-L Analog Input/Output Module User's Manual <SH-081167ENG, 13JZ87>	Explains the specifications of MELSEC-L Analog Input/Output Module (L60AD2DA2) data logging function.
MELSEC-L Dual Channel Isolated High Resolution Analog-Digital Converter Module User's Manual <SH-081103ENG, 13JZ72>	Explains the specifications of MELSEC-L Dual Channel Isolated High Resolution Analog-Digital Converter Module (L60AD4-2GH) data logging function.
GX Works2 Version 1 Operating Manual (Common) <SH-080779ENG, 13JU63>	Explains the system configuration of GX Works2 and the functions common to Simple project and Structured project such as parameter setting, operation method for the online function.

Remark

Manuals in printed form are sold separately for single purchase. Order a manual by quoting the manual number (model code) listed in the table above.

CONTENTS

SAFETY PRECAUTIONS	1
CONDITIONS OF USE FOR THE PRODUCT	2
INTRODUCTION	3
RELATED MANUALS	3
HOW TO READ THIS MANUAL	9
TERMS	11

CHAPTER 1 OVERVIEW	13
--------------------------	----

1.1 Overview of GX LogViewer	13
1.2 Features	14

CHAPTER 2 SYSTEM CONFIGURATION	18
--------------------------------------	----

2.1 Operating Environment	18
2.2 Displaying Data Logged by QnUDVCPU/LCPU	19
2.2.1 Details of system configuration	19
2.2.2 Connection from USB/serial port	20
2.2.3 Connection from I/F boards	23
2.3 Displaying Data Logged by High Speed Data Logger Module/High Speed Data Communication Module	24
2.3.1 Details of system configuration	24
2.3.2 For a connection via a hub	25
2.3.3 For a direct connection	25
2.4 Displaying Data Logged by Q/L Series Analog Module	27
2.4.1 Details of system configuration	27
2.4.2 Connection from USB/Serial Port	28
2.4.3 Connection from I/F boards	28
2.5 Connection Precautions	28

CHAPTER 3 FUNCTION LIST	29
-------------------------------	----

CHAPTER 4 ACQUIRING AND STARTING GX LogViewer	32
---	----

4.1 Acquiring GX LogViewer	32
4.2 Installation	32
4.2.1 Installation procedure	33
4.2.2 Uninstallation procedure	38
4.3 Starting GX LogViewer	40
4.3.1 Starting from the Start menu	40
4.3.2 Starting from the configuration tool	40

CHAPTER 5 OPERATION FLOWS	41
---------------------------------	----

5.1 When Using QnUDVCPU/LCPU or Q/L Series Analog Module	42
5.1.1 Operation flow for a user using GX LogViewer for the first time	42
5.1.2 Operation flow for the basic operations of GX LogViewer	43
5.1.3 Operation flow for an experienced user of GX LogViewer	44
5.2 When Using High Speed Data Logger Module	45

5.2.1	Operation flow for a user using GX LogViewer for the first time	45
5.2.2	Operation flow for the basic operations of GX LogViewer	46
5.2.3	Operation flow for an experienced user of GX LogViewer	47
5.3	When Using High Speed Data Communication Module	48
5.3.1	Operation flow for a user using GX LogViewer for the first time	48
5.3.2	Operation flow for the basic operations of GX LogViewer	49
5.3.3	Operation flow for an experienced user of GX LogViewer	50
5.4	When Using Energy Measuring Unit	51
5.5	Operation flow when displaying sampling trace data	51
5.6	Operations while trend graphs are displayed	52
5.7	Operations while event list is displayed	52

CHAPTER 6 SCREEN CONFIGURATION	53
---------------------------------------	-----------

6.1	Main Window	53
6.2	Child Windows	54
6.3	Menu Configuration	56
6.4	Toolbars and Shortcut Keys	61

CHAPTER 7 ASSISTANT FUNCTION	64
-------------------------------------	-----------

7.1	Overview	64
7.2	Screen Configuration	65
7.2.1	Q Series	65
7.2.2	L Series	69

CHAPTER 8 CONNECTING TO MODULE	71
---------------------------------------	-----------

8.1	Selecting Connection Destination	71
8.2	Connecting to QCPU/LCPU	72
8.2.1	Transfer setup screen	72
8.2.2	Connecting directly using a USB/Ethernet cable	74
8.2.3	Connecting via network	75
8.2.4	Communication test	78
8.2.5	Connection Channel List	78
8.3	Connecting to High Speed Data Logger Module	79
8.3.1	Transfer setup screen	79
8.3.2	Connecting via hub with specifying IP address	80
8.3.3	Connecting directly using a crossing cable without specifying IP address	82
8.3.4	Communication test	82
8.4	Connecting to High Speed Data Communication Module	83
8.4.1	Transfer setup screen	83
8.4.2	Connecting via hub with specifying IP address	84
8.4.3	Connecting directly using a crossing cable without specifying IP address	86
8.4.4	Communication test	86

CHAPTER 9 USING TREND GRAPH FUNCTION	87
9.1 Overview	87
9.2 Screen Configuration	90
9.2.1 Trend window	90
9.2.2 Graph legend area	91
9.2.3 Graph area	92
9.2.4 Difference information area	93
9.2.5 Status bar	95
9.3 Displaying Trend Graphs	96
9.3.1 Displaying logged devices (Historical trend)	96
9.3.2 Displaying current devices (Realtime trend)	101
9.3.3 Operating realtime trend monitoring status	104
9.4 Checking Data	106
9.4.1 Checking and comparing data values/status	106
9.4.2 Adding/deleting data to/from graph legend area	108
9.5 Adjusting Trend Graphs	111
9.5.1 Displaying/hiding graphs	111
9.5.2 Aligning graphs	114
9.5.3 Superimposing graphs	115
9.5.4 Moving cursor by specifying value/time/index (Jump cursor)	116
9.5.5 Specifying upper/lower limit display value	123
9.5.6 Moving graph up/down	126
9.5.7 Moving graph up/down/left/right	127
9.5.8 Expanding/reducing time scale	129
9.5.9 Displaying consecutive previous/next trend graph	129
9.6 Changing Display Items in Graph Area	134
9.6.1 Displaying multiple cursor	134
9.6.2 Displaying cursor labels	135
9.6.3 Displaying data names	135
9.6.4 Switching graph plot format	136
9.6.5 Changing display of time scale labels	137
9.6.6 Switching languages	137
9.7 Changing Graph Appearance	138
9.7.1 Changing color and type of graph	138
9.7.2 Highlighting graph	143
9.7.3 Thickening graph line	143
9.8 Registering and Reflecting Graphical Display Settings of Trend Windows	144
9.9 Reflecting a Graph Display Automatically When Opening a File	148
9.10 Initializing Graph Display	148
9.11 Graph Display for Missing Data or Time Reversed Data	149
9.12 Displaying Abnormal Graphs	151
9.13 Handling BCD Type Incorrect Values	152

CHAPTER 10 USING EVENT MONITORING FUNCTION	153
10.1 Overview	153

10.2	Screen Configuration	155
10.2.1	Event window.....	155
10.2.2	Event list.....	156
10.2.3	Status bar.....	157
10.3	Displaying Event List	158
10.3.1	Displaying logged events (Historical event).....	158
10.3.2	Displaying current events (Realtime event).....	161
10.3.3	Operating realtime event monitoring status	162
10.4	Operating Event List.....	163
10.4.1	Displaying only events that meet specific conditions (Filtering).....	163
10.4.2	Sorting events	165
10.4.3	Switching languages	166
10.4.4	Displaying consecutive previous/next event	166
10.5	Changing Display Settings of Event List.....	171

CHAPTER 11 SAVING LOGGING FILES TO PERSONAL COMPUTER	174
--	-----

CHAPTER 12 USING WINDOWS/FOLDERS DISPLAYED IN PAST	176
--	-----

12.1	Overview.....	176
12.2	Adding/Restoring Frequently-Used Window Configurations to Menu.....	177
12.3	Redisplaying Recently-Used Windows.....	181
12.4	Redisplaying Recently-Used Folders	182

CHAPTER 13 SAVING DISPLAYED DATA/EVENTS	183
---	-----

13.1	Save Target.....	183
13.2	Saving Displayed Data	184
13.2.1	Saving displayed data to CSV file	184
13.2.2	Saving displayed trend graphs to image file	202
13.3	Saving Displayed Events	203
13.3.1	Saving displayed events to CSV file	203
13.3.2	Saving displayed events to image file	206

CHAPTER 14 PRINTING TREND GRAPHS	207
----------------------------------	-----

14.1	Overview.....	207
14.2	Flow of Print	208
14.3	Setting Print Configuration	208
14.3.1	Setting color and margin	209
14.3.2	Setting printer.....	210
14.3.3	Setting header/footer	211
14.3.4	Setting graph legend output.....	212
14.4	Checking Print Preview.....	213

CHAPTER 15 HELP MENU	214
----------------------	-----

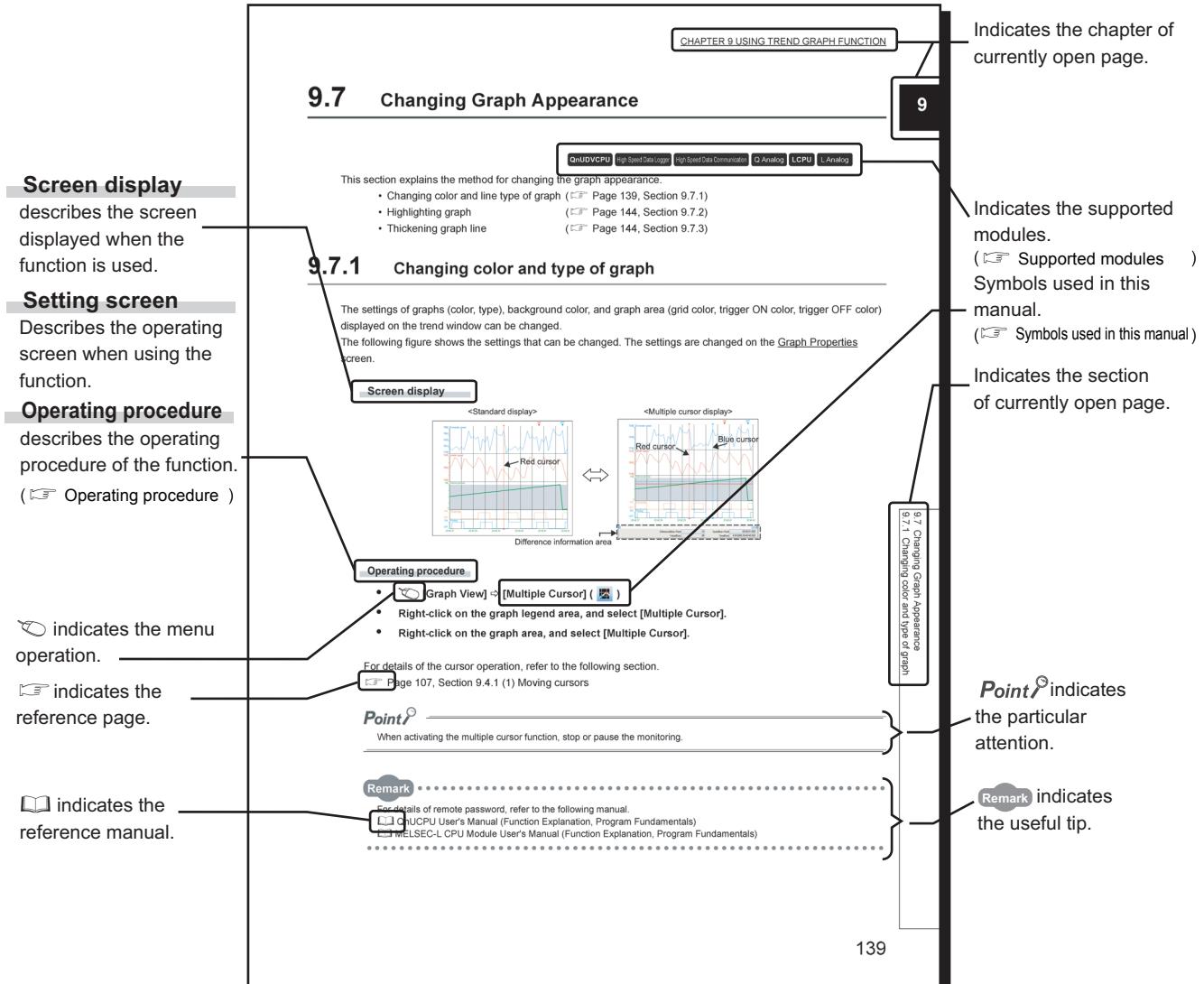
15.1	Opening Manual	214
------	----------------------	-----

15.2 Version Information	214
<hr/>	
CHAPTER 16 TROUBLESHOOTING	215
<hr/>	
APPENDIX	216
<hr/>	
Appendix 1 USB Driver Installation	216
Appendix 2 Added and Changed Functions	225
Appendix 3 Usable Characters	226
Appendix 3.1 Usable ASCII characters	226
Appendix 3.2 Characters usable in file names, folder (directory) names	227
Appendix 4 PING Test	228
<hr/>	
INDEX	229
<hr/>	
REVISIONS	230

HOW TO READ THIS MANUAL

The following explains the page composition and symbols in this manual.

The contents of the example page used here are different from the actual contents for the intention of explaining how to use this manual.



139

• Operating procedure

The following three types of procedure are found under **Operating procedure**.

1) When the operation is performed with a single step

[Graph View] \Rightarrow [Change the Data to Draw Graphs]

2) When the operation is performed with multiple steps

1. Move the blue cursor to the position where data are checked.
2. Check the values displayed in the "Value (Blue)" and "Time (Blue)"/"Index (Blue)" fields of the difference information area.

3) When the operation can be performed by more than one method

- [Graph Operation] \Rightarrow [Jump Cursor] ()
- Right-click on the graph legend area, and select [Jump Cursor].

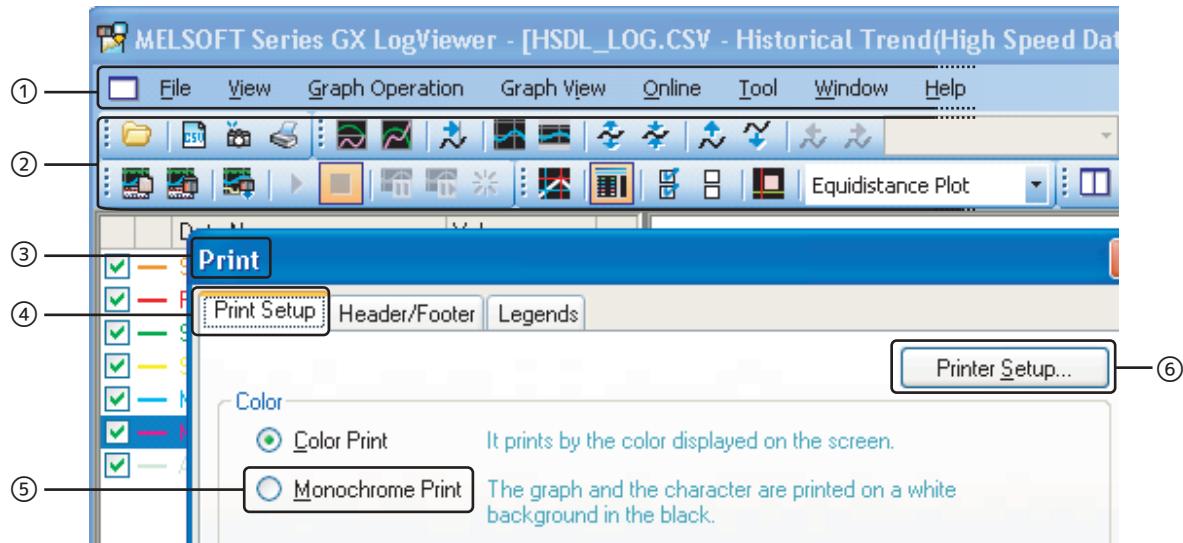
- Supported modules

The following table explains the module icons that indicate the function availability.

Icon						Description
QnUDVCPU	High Speed Data Logger Module	High Speed Data Communication Module	Q Series Analog Module	LCPU	L Series Analog Module	
						These icons indicate that the explanation of the corresponding module is written in the section.
						These icons indicate that the explanation of the corresponding module is not written in the section.

- Symbols used in this manual

The following shows the symbols used in this manual with descriptions and examples.



No.	Notation	Description	Example
①	[]	Menu name on menu bar	[File] ⇒ [Open]
②		Toolbar icon	()
③	<u>(Underline)</u>	Screen name	<u>Print</u> screen
④	<< >>	Tab name on screen	<<Print Setup>> tab
⑤	" "	Item name on screen	"Monochrome Print"
⑥		Button on screen	Button
-		Keyboard key	key
-	' '	Function name	'Print' function

TERMS

This manual uses the terms listed in the following table unless otherwise noted.

Term	Description
QCPU	Generic term for Q00J, Q00UJ, Q00, Q00U, Q01, Q01U, Q02, Q02H, Q02PH, Q02U, Q03UD, Q03UDE, Q03UDV, Q04UDH, Q04UDEH, Q04UDV, Q06H, Q06PH, Q06UDH, Q06UDEH, Q06UDV, Q10UDH, Q10UDEH, Q12H, Q12PH, Q12PRH, Q13UDH, Q13UDEH, Q13UDV, Q20UDH, Q20UDEH, Q25H, Q25PH, Q25PRH, Q26UDH, Q26UDEH, Q26UDV, Q50UDEH, Q100UDEH
QnUDVCPU	Generic term for Q03UDV, Q04UDV, Q06UDV, Q13UDV, and Q26UDV
LCPU	Generic term for L02, L02-P, L06, L06-P, L26, L26-P, L26-BT, and L26-PBT
Programmable controller CPU	Generic term for QCPU and LCPU
High Speed Data Logger Module	Abbreviation for MELSEC-Q Series-compatible High Speed Data Logger Module (QD81DL96)
High Speed Data Communication Module	Abbreviation for MELSEC-Q Series-compatible High Speed Data Communication Module (QJ71DC96)
Q Series Analog Module	Generic term for MELSEC-Q High Speed Analog-Digital Converter Module (Q64ADH) and MELSEC-Q Current Transformer Input Module (Q68CT)
L Series Analog Module	Generic term for MELSEC-L Analog-Digital Converter Module (L60AD4, L60AD4-2GH) and MELSEC-L Analog Input/Output Module (L60AD2DA2)
Q/L Series Analog Module	Generic term for Q series Analog Module and L series Analog Module
Energy Measuring Unit	Generic term for Logging Unit for Energy Measuring Unit (EcoMonitorLight) (EMU4-LM)
Module	A module that can be connected to GX LogViewer. (QnUDVCPU/LCPU, High Speed Data Logger Module, High Speed Data Communication Module, Q Series Analog Module, L Series Analog Module, and Energy Measuring Unit)
GX Works2	Generic product name for SWnDNC-GXW2-E ("n" indicates version.)
SD memory card	Secure Digital Memory Card is a memory device configured by the flash memory. This memory card is required for the QnUDVCPU/LCPU logging function and L Series Analog Module logging function
CompactFlash card	A storage card regulated by the 'CF+ and CompactFlash Specification' issued by the CompactFlash Association. The memory card required for operating the High Speed Data Logger Module
ATA card	Abbreviation for Q2MEM-8MBA, Q2MEM-16MBA, and Q2MEM-32MBA This AT Attachment card is required for Q series Analog Module logging function.
Memory card	The general term for SD memory card, CompactFlash card, and ATA card
Data logging file	A file in which data sampled by the module are saved in the specified format
Event logging file	A file in which events sampled by the High Speed Data Logger Module are saved in the specified format
Logging file	The general term for the data logging file and event logging file
CSV file	CSV is an abbreviation for Comma Separated Values. A text file in which data are organized by separating it with commas (",")
Binary file	A non-text file format which can be interpreted correctly only by the dedicated tools such as GX LogViewer
Plot	Each single point of data sampled by the module displayed on the trend graph
Windows® XP	Generic term for Microsoft® Windows® XP Professional Operating System and Microsoft® Windows® XP Home Edition Operating System

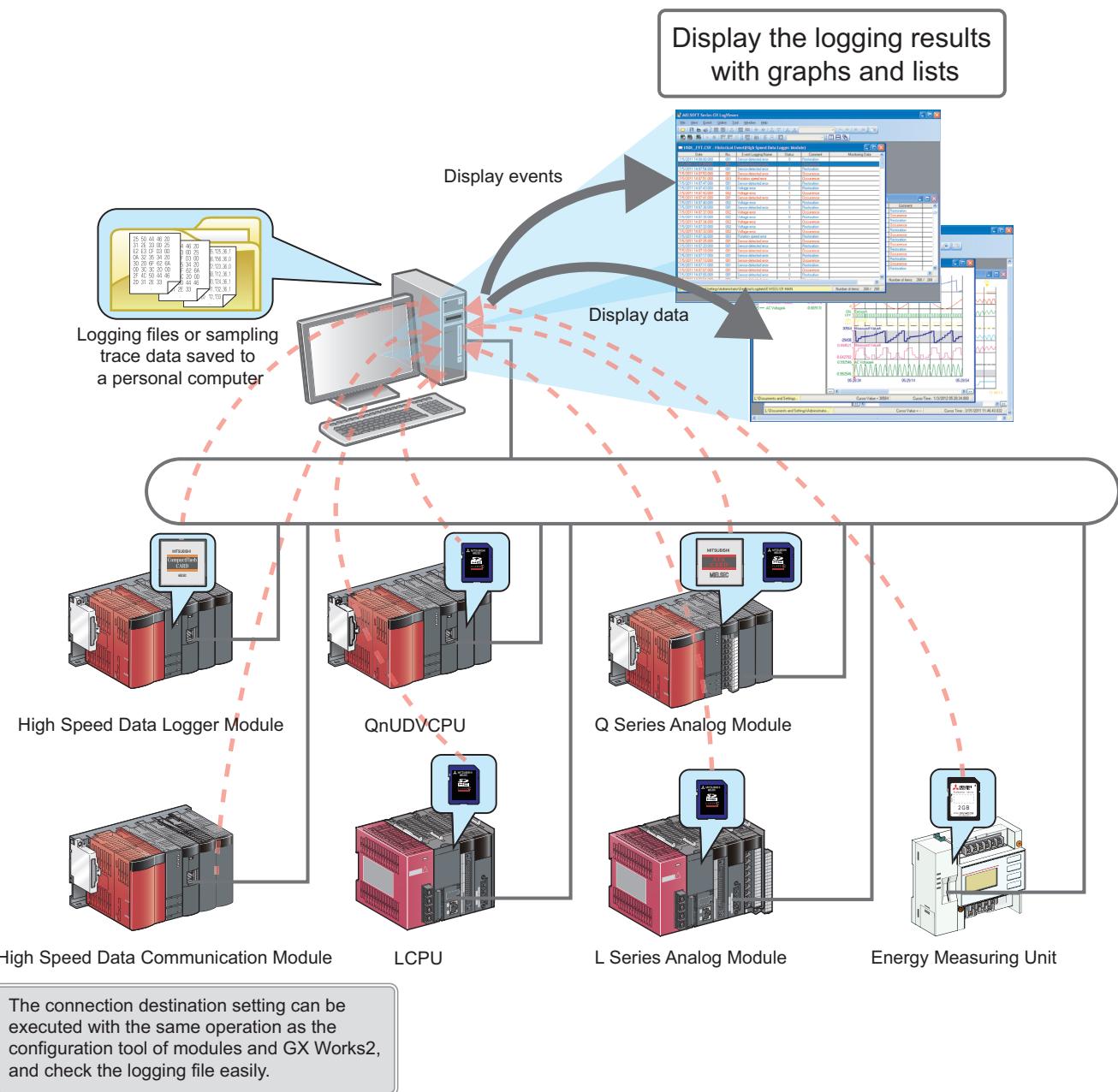
Term	Description
Windows Vista®	Generic term for Microsoft® Windows® Vista® Home Basic Operating System, Microsoft® Windows Vista® Home Premium Operating System, Microsoft® Windows Vista® Business Operating System, Microsoft® Windows Vista® Ultimate Operating System, and Microsoft® Windows Vista® Enterprise Operating System
Windows® 7	Generic term for Microsoft® Windows® 7 Starter Operating System, Microsoft® Windows® 7 Home Premium Operating System, Microsoft® Windows® 7 Professional Operating System, Microsoft® Windows® 7 Ultimate Operating System, and Microsoft® Windows® 7 Enterprise Operating System
Windows® 8	Generic term for Microsoft® Windows® 8 Operating System, Microsoft® Windows® 8 Pro Operating System, and Microsoft® Windows® 8 Enterprise Operating System
Personal computer	Generic term for personal computers on which Windows® operates
Configuration tool	Generic term for QnUDVCPU & LCPU logging configuration tool, High Speed Data Logger Module configuration tool, and High Speed Data Communicaiton Module configuration tool
Logging configuration tool	Abbreviation for QnUDVCPU & LCPU logging configuration tool

CHAPTER 1 OVERVIEW

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

1.1 Overview of GX LogViewer

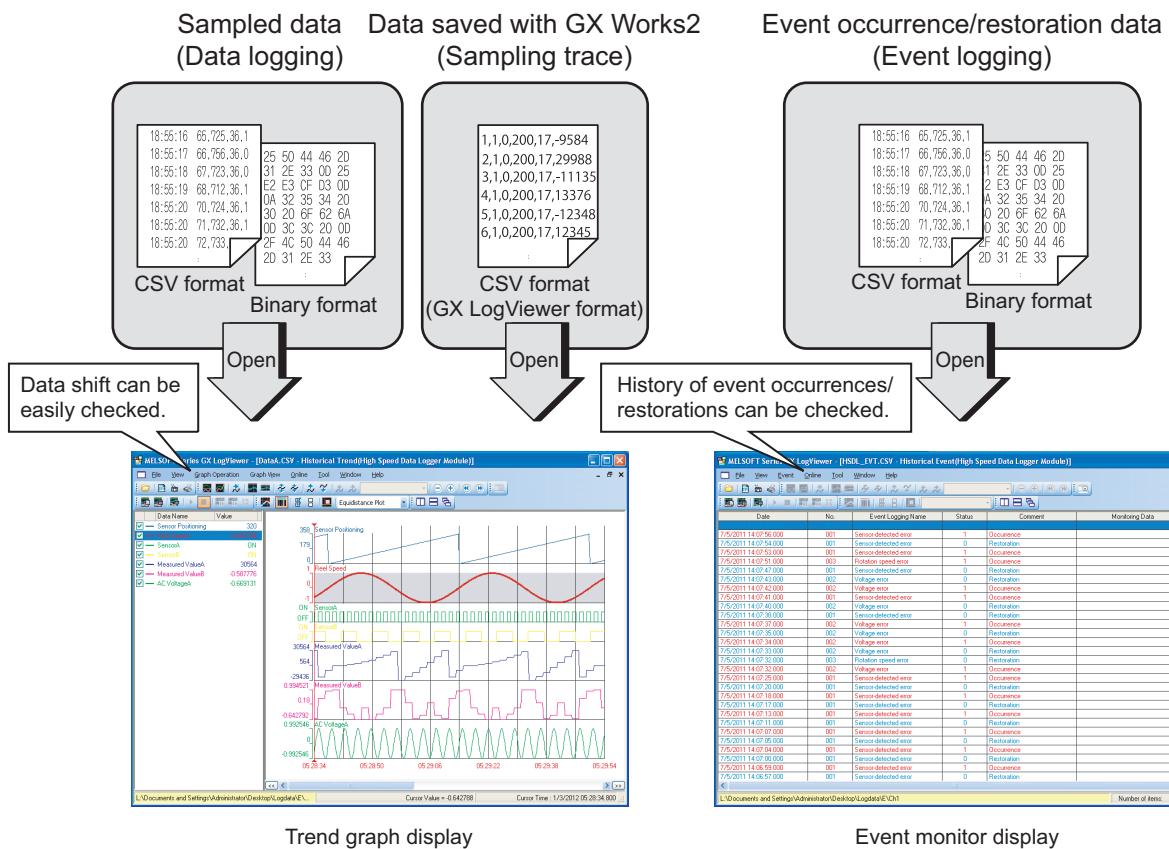
GX LogViewer is a tool for displaying and analyzing large-volume data sampled by the various modules which feature the logging function with a simple and easy-to-understand operation.



1.2 Features

(1) Displaying sampled data and events visually

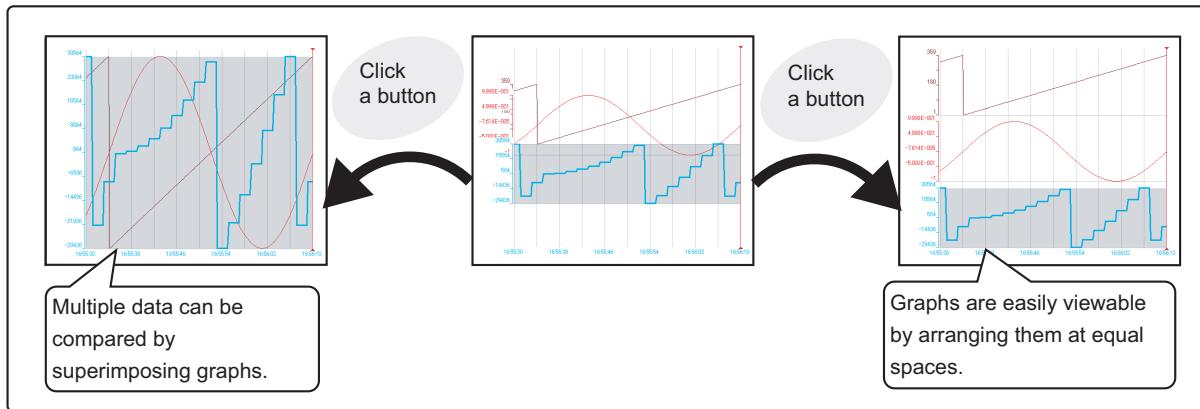
Data check is performed efficiently since data and events sampled and saved with the module or GX Works2 are displayed visually.



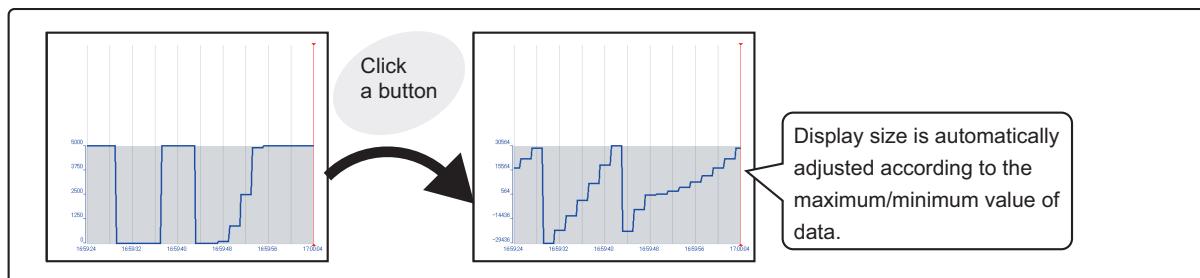
(2) Easy graph adjustment with automatic adjustment function and drag operation

Graphs are easily adjusted without manuals by using the automatic adjustment function and the drag operation. Data can be checked instantly since graphs are adjusted intuitively and smoothly by only using a mouse.

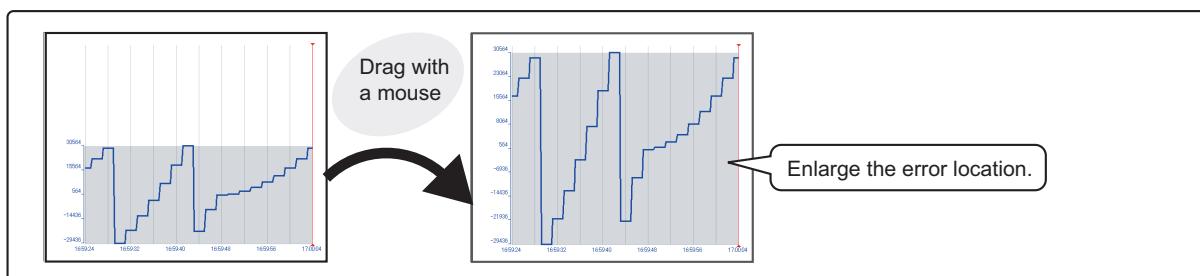
1) Graph arrangement and superimpose (☞ Page 114, Section 9.5.2, Page 115, Section 9.5.3)



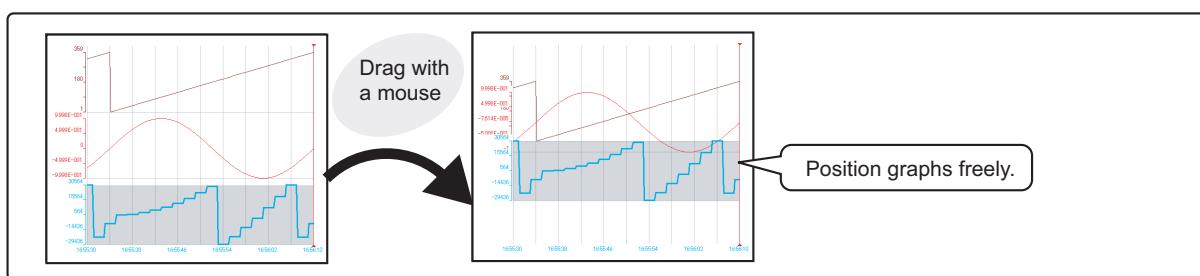
2) Automatic graph adjustment (☞ Page 123, Section 9.5.5)



3) Display size adjustment (☞ Page 126, Section 9.5.6)

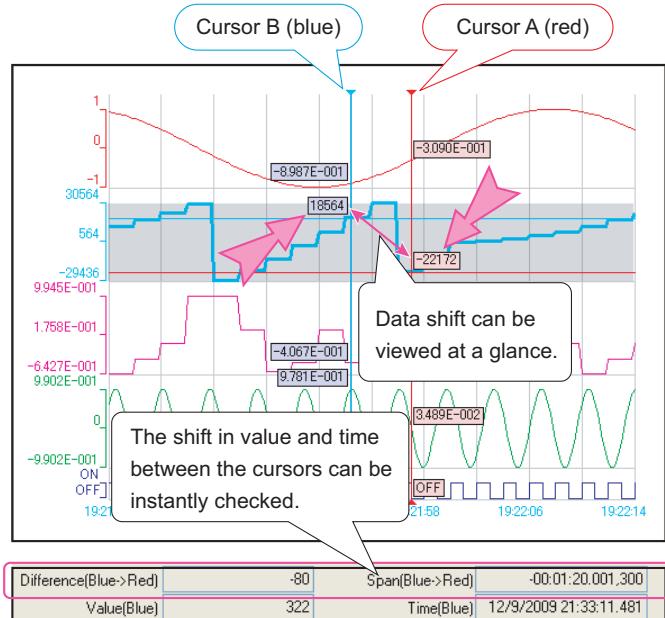


4) Move graph (☞ Page 127, Section 9.5.7)



(3) Instant check for data changes with easy-to-understand operation

Data changes are instantly checked by using the two cursors (multiple cursor function).

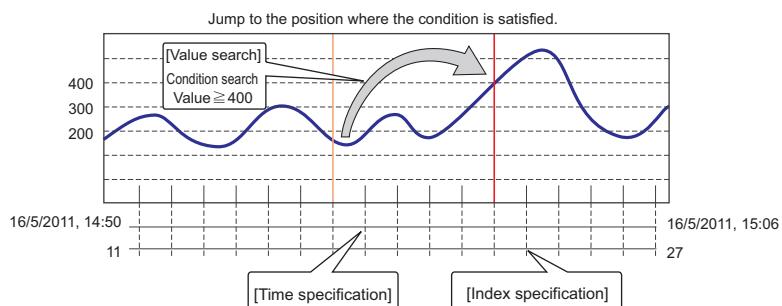


For the multiple cursor function, refer to the following section.

☞ Page 134, Section 9.6.1 Displaying multiple cursor

(4) Instant check for the target data

Data values are instantly checked by using Jump Cursor function to jump the cursor to the specified value/time/index position on the trend graph.



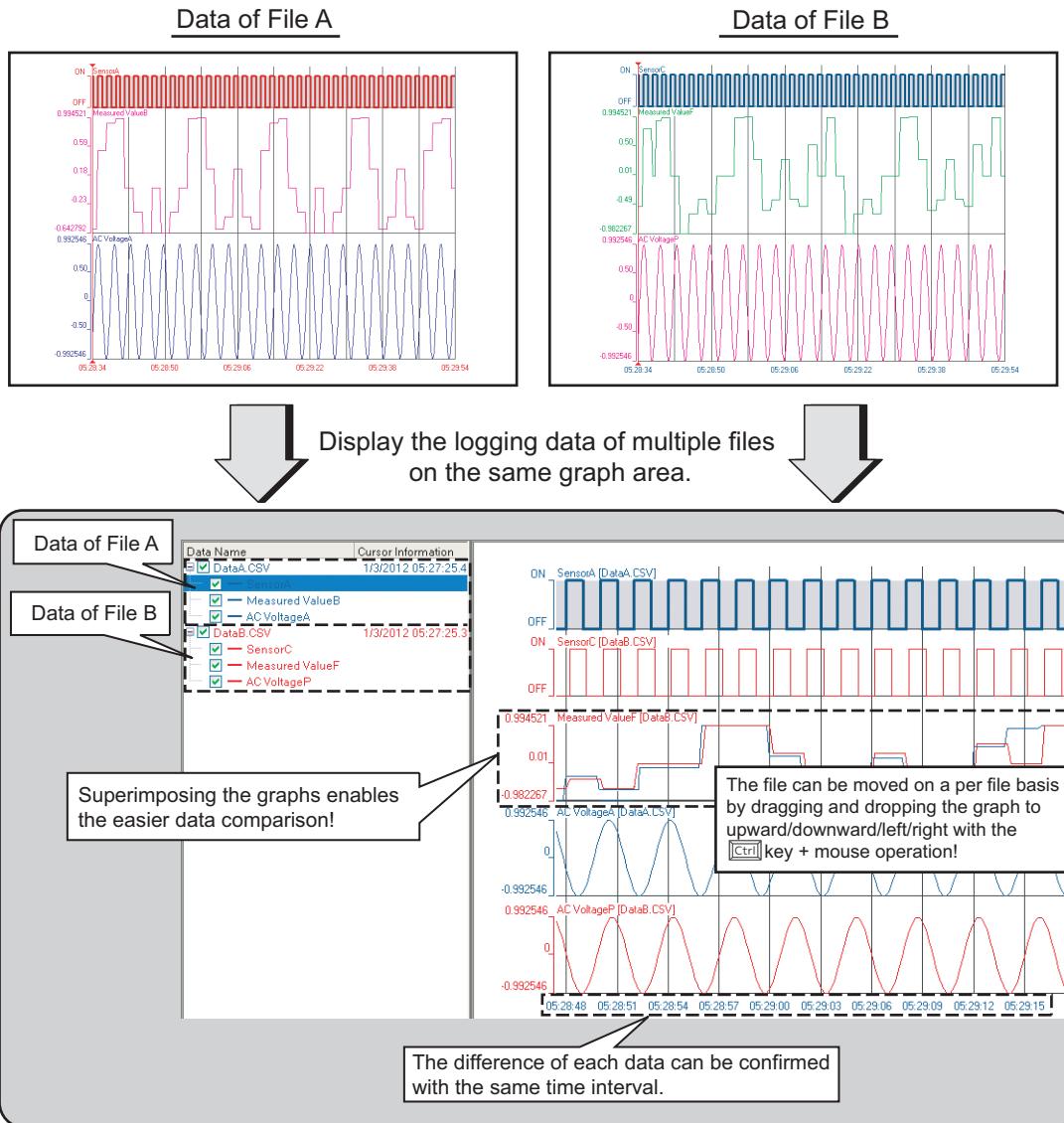
For Jump Cursor function, refer to the following section.

☞ Page 116, Section 9.5.4 Moving cursor by specifying value/time/index (Jump cursor)

(5) Easy confirmation of logging data differences between multiple files

Display logging data stored in the multiple files on the same graph area, and the difference of each data can be confirmed with the same time interval.

Furthermore, superimposing the graphs with simple operation enables the easier data comparison between multiple files.



For operation of displaying logging data of multiple files, refer to the following section.

☞ Page 108, Section 9.4.2 Adding/deleting data to/from graph legend area

☞ Page 127, Section 9.5.7 Moving graph up/down/left/right

CHAPTER 2 SYSTEM CONFIGURATION

This chapter explains the operating environment and the system configuration of GX LogViewer.

Operating environment is described in the Section 2.1, and module configurations are described on the following reference pages.

Module name	Reference page
QnUDVCPU/LCPU	Page 19, Section 2.2
High Speed Data Logger Module	Page 24, Section 2.3
High Speed Data Communication Module	
Q/L Series Analog Module	Page 27, Section 2.4

2.1 Operating Environment

QnUDVCPU **High Speed Data Logger** **High Speed Data Communication** **Q Analog** **LCPU** **L Analog**

For details of the GX LogViewer operating environment, refer to the document stored with the files of the installer.

[For English version software]

『 Operating Environment for GX LogViewer Version 1 (English Version) (BCN-P5879)

[For Chinese version software]

『 GX LogViewer Version 1 简体中文版运行环境 (BCN-P5874)

2.2 Displaying Data Logged by QnUDVCPU/LCPU



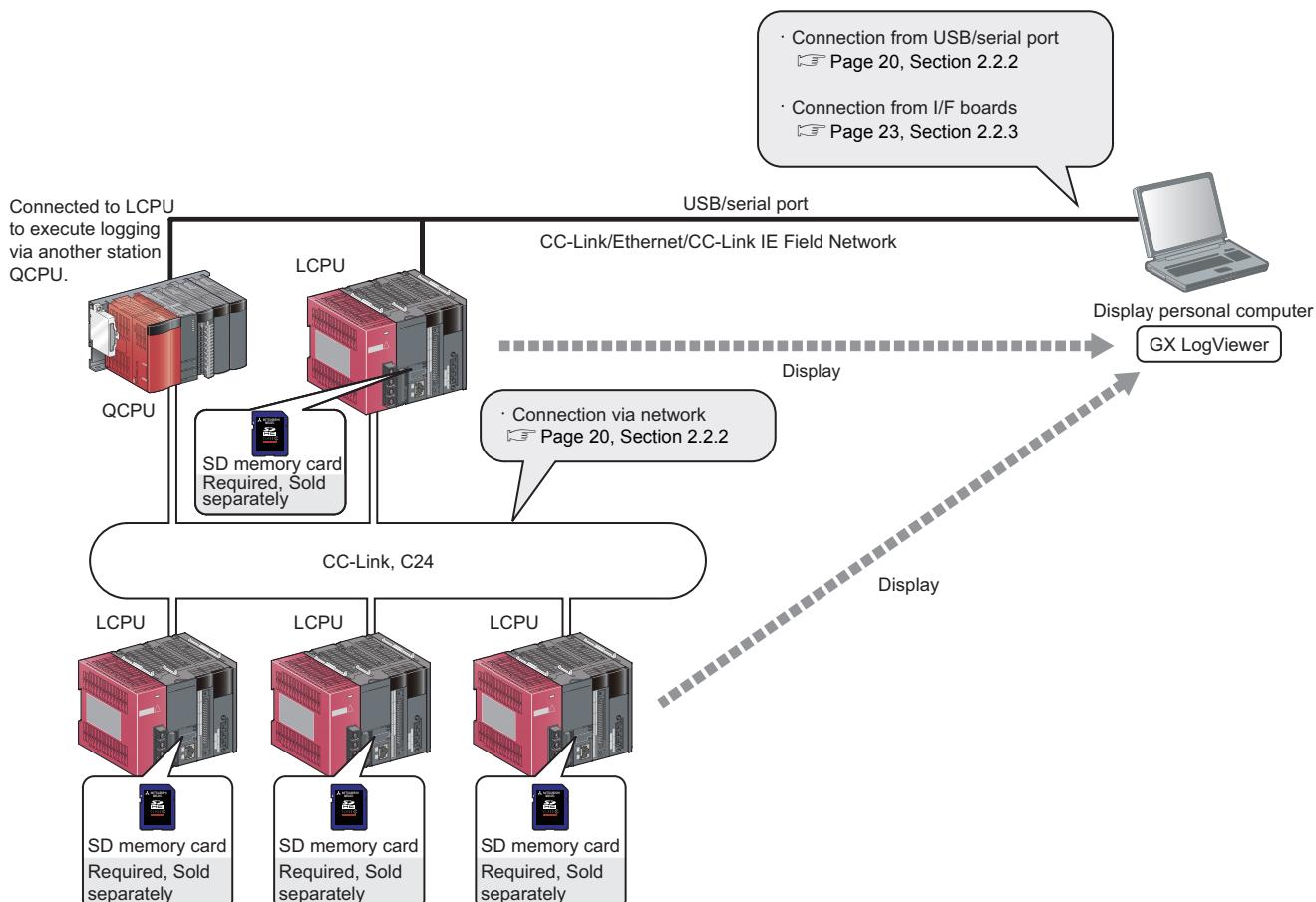
When displaying data logged by QnUDVCPU/LCPU on GX LogViewer, connect to the various modules.

2.2.1 Details of system configuration

This section explains the system configuration when displaying data logged by QnUDVCPU/LCPU on GX LogViewer.

The possible connection route is the same as that of logging configuration tool.

The following figure shows the example of displaying logging data sampled by LCPU on GX LogViewer.

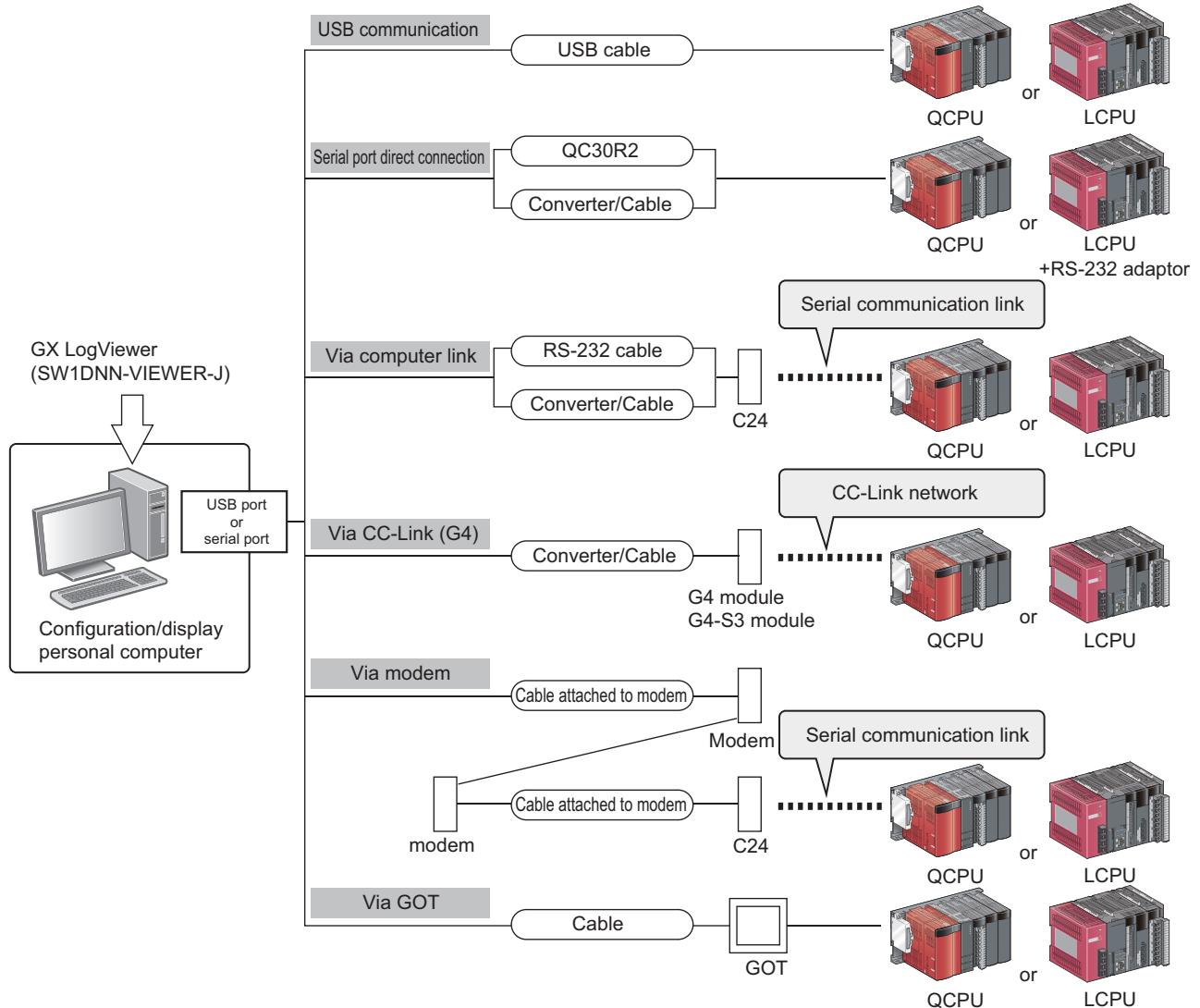


Remark

- GX LogViewer is supported by all QnUDVCPU/LCPUs.
- Read the following precautions when connecting with QnUDVCPU/LCPU.
Page 28, Section 2.5 Connection Precautions

2.2.2 Connection from USB/serial port

The following shows the possible system configuration for connecting the LCPU using the USB/serial port of a personal computer.



(1) Connection using USB cable

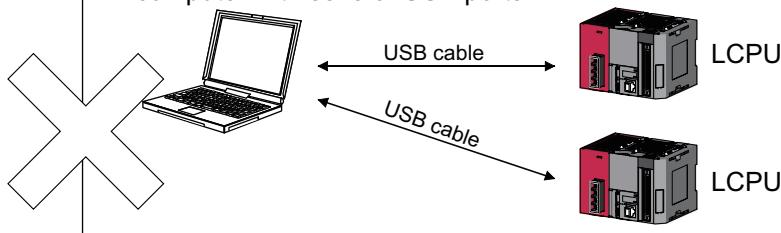
The following table shows USB cables and USB adaptors whose operation have been confirmed by Mitsubishi Electric.

Product name	Model name	Maker name
USB cable (USB A type - USB miniB type)	MR-J3USBCBL3M	Mitsubishi Electric Corporation

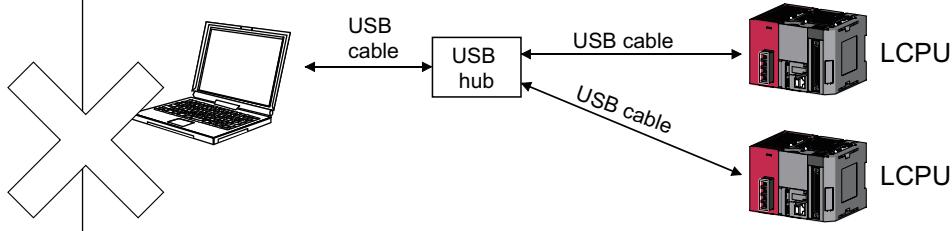
Only one programmable controller CPU can be connected to a personal computer using a USB cable. Connection to programmable controller CPUs is not applicable in the configuration examples below. (Same as QCPU.)

<Inapplicable configuration>

- Connection to several programmable controller CPUs from the personal computer with several USB ports



- Connection to several programmable controller CPUs via USB hub



Point

● Using a USB cable for the first time

Install the USB driver. For the installation of the USB driver, refer to the following section.

☞ Page 216, Appendix 1 USB Driver Installation

● Using a USB/RS-232 conversion cable

For checking the COM port number as connecting a personal computer to a programmable controller CPU using a USB/RS-232 conversion cable etc., refer to the user's manual of each cable.

(2) Connection using RS-232 cable

The following table shows the RS-232 cable whose operation have been confirmed by Mitsubishi Electric.

Model name	Maker name
QC30R2 (Personal computer connector: 9-pin D-sub connector) 	Mitsubishi Electric Corporation RS-232 cable

Point

● High-speed communication

For high-speed communication (transmission speed: 115.2/57.6kbps), use a personal computer compatible with high-speed communication.

When a communication error occurs, retry the communication after reducing the transmission speed setting.

(3) Connection via GOT

The use of the transparent function of GOT enables the access to a programmable controller CPU via GOT. For details, refer to the following manuals.

📖 Connection Manual of GOT2000 Series

📖 Connection Manual of GOT1000 Series

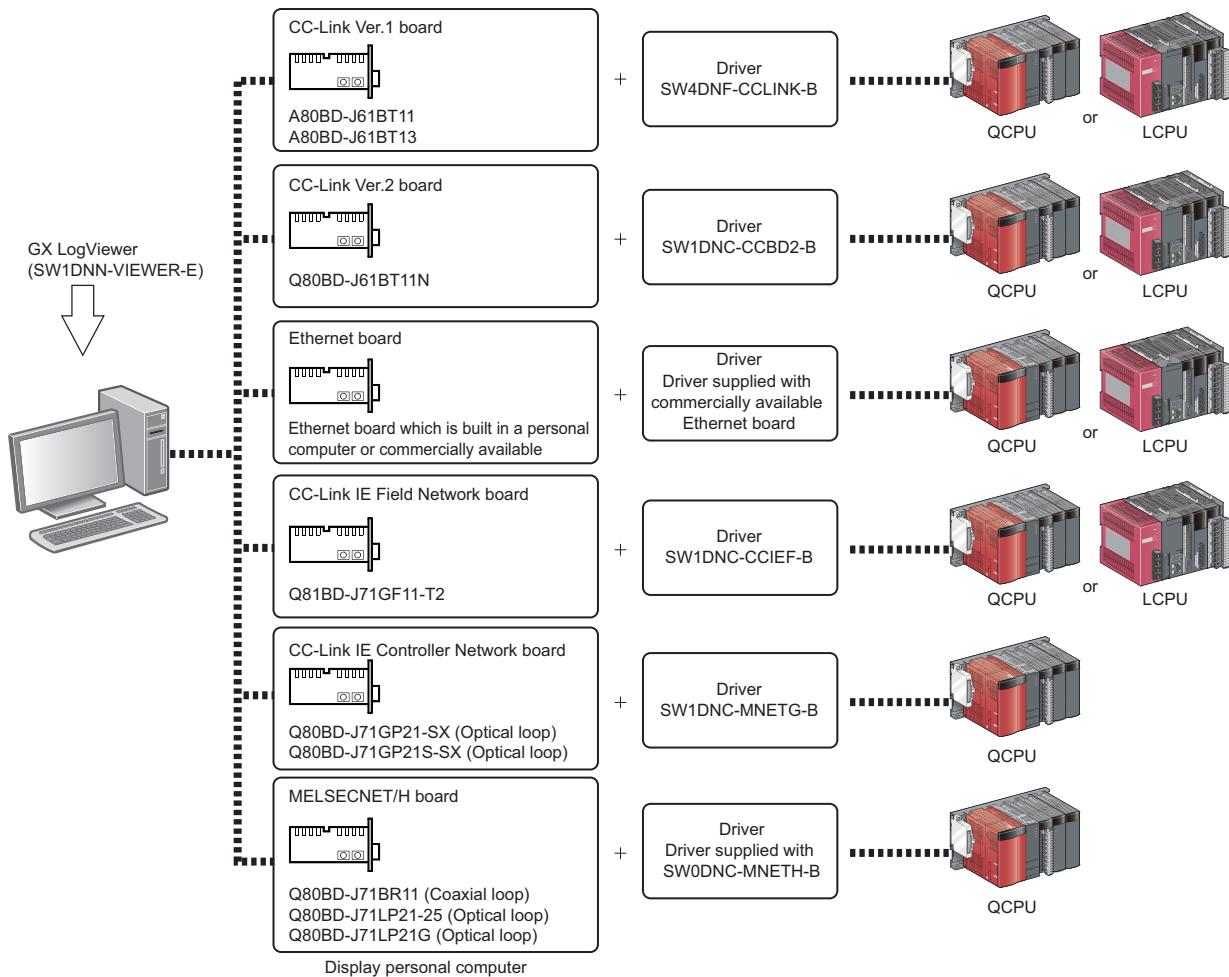
📖 GOT-A900 Series User's Manual (Connection System Manual)

📖 GOT-F900 SERIES GRAPHIC OPERATION TERMINAL HARDWARE Manual [Connection]

2.2.3 Connection from I/F boards

The following shows the system configuration for connecting to programmable controller CPUs using an I/F board mounted on the personal computer.

For the applications and mounting method of I/F boards, and driver installation, refer to the manual of each I/F board.



Point

The TCP connection is recommended for the Ethernet connection.

A longer processing time is required for "Open Logging File" or "Save Logging File to PC" function when using the Ethernet direct connection or the UDP connection.

2.3 Displaying Data Logged by High Speed Data Logger Module/High Speed Data Communication Module

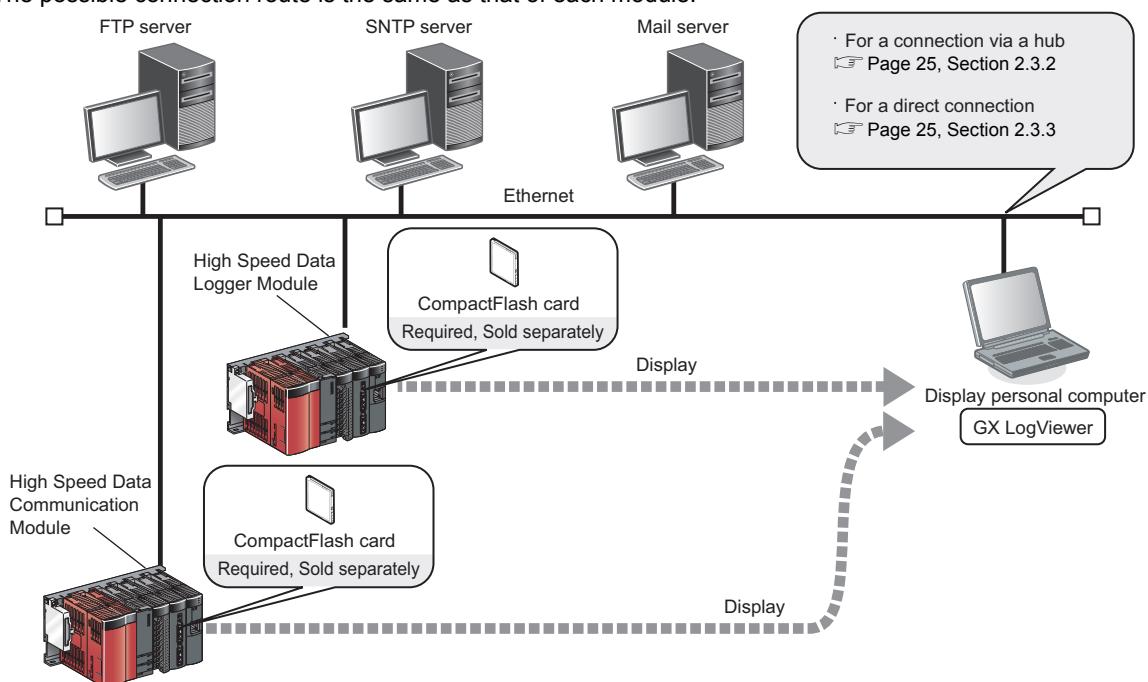


When displaying data logged by High Speed Data Logger Module/High Speed Data Communication Module on GX LogViewer, connect to the various modules.

2.3.1 Details of system configuration

This section explains the system configuration when displaying data sampled by High Speed Data Logger Module/High Speed Data Communication Module on GX LogViewer.

The possible connection route is the same as that of each module.



(1) Communication route

The following are the two types of communication route between a High Speed Data Logger Module/High Speed Data Communication Module and a personal computer

- Connection via a hub: Specify an IP address, and communicate via hub (Page 25, Section 2.3.2)
- Direct connection: Connect directly with the Ethernet cable (crossing cable) and communicate (Page 25, Section 2.3.3)

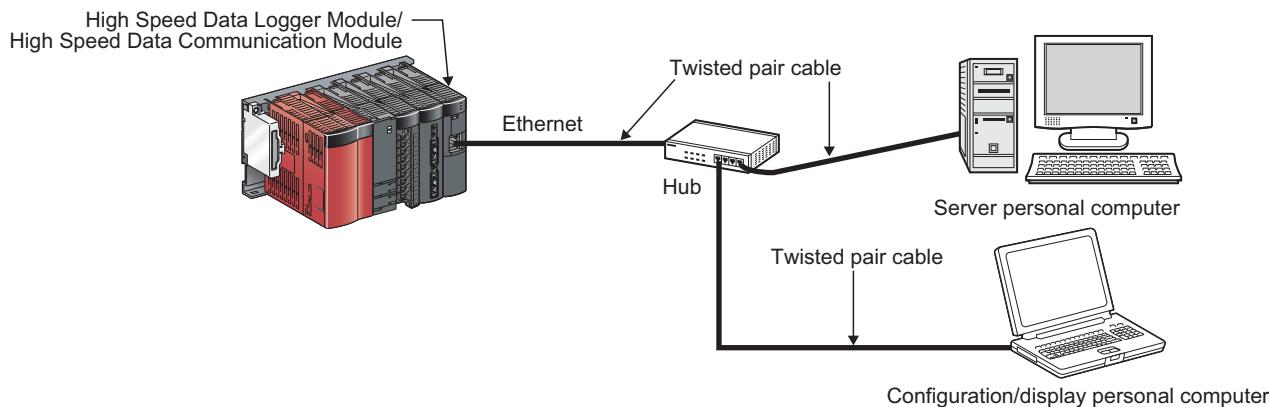


- Read the following precautions when connecting to a High Speed Data Logger Module/High Speed Data Communication Module.
(Page 28, Section 2.5 Connection Precautions)
- Ethernet (twisted pair) cables (Sold separately)
Ethernet cables that conform to the standard of IEEE802.3, 10BASE-T/100BASE-TX can be used.
For details of Ethernet communication specifications, refer to the following manual.
High Speed Data Logger Module User's Manual
High Speed Data Communication Module User's Manual

2.3.2 For a connection via a hub

In this method, the High Speed Data Logger Module/the High Speed Data Communication Module and a personal computer are connected through a local area network via a hub.

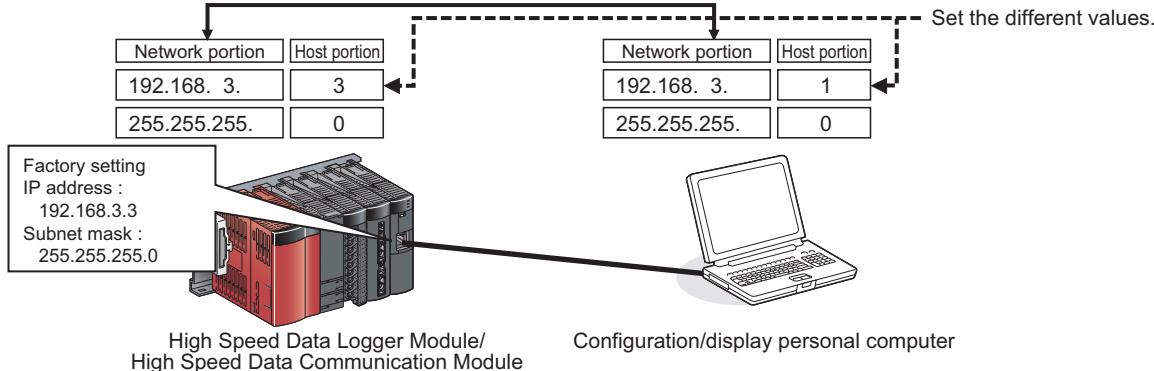
The IP address of each module must be specified when connecting via a hub.



Point

- For the network setting of the personal computer, set the same network address as that of the High Speed Data Logger Module/the High Speed Data Communication Module,

Set the same values.



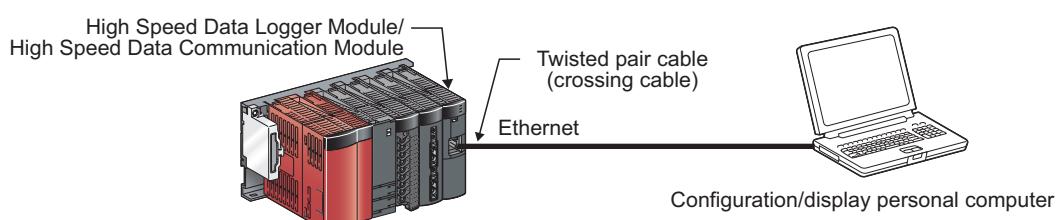
Set the different values.

- The High Speed Data Logger Module/the High Speed Data Communication Module can be only connected over a LAN connection.
The module cannot be connected over the Internet.

2.3.3 For a direct connection

In this method, the High Speed Data Logger Module/the High Speed Data Communication Module and a personal computer are directly connected on a 1:1 basis through an Ethernet cable (crossing cable) without a hub.

The IP address of each module does not need to be specified to perform communication when directly connecting.
(The broadcast is used to perform communication.)



(1) Precautions for direct connection

This section explains precautions when directly connecting a personal computer to the High Speed Data Logger Module/the High Speed Data Communication Module.

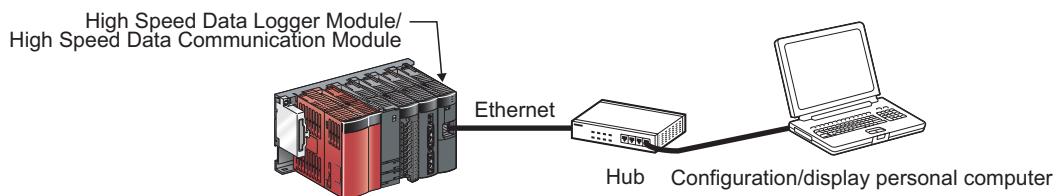
(a) Connecting to a LAN line

Do not connect to a LAN line and communicate over a direct connection.

By communicating over a direct connection, a load is placed on the line and it can affect the communication of other devices.

(b) Connections which are not direct connections

Direct connection setup cannot be performed in a configuration where a single High Speed Data Logger Module/High Speed Data Communication Module and a single personal computer are connected to a hub as shown in the following figure.



(c) Conditions where communication cannot be accomplished with a direct connection

If the conditions below match, communications cannot be performed with a direct connection.

If communications cannot be performed, review the High Speed Data Logger Module/the High Speed Data Communication Module or personal computer settings.

- When for each bit of the High Speed Data Logger Module's IP address/the High Speed Data Communication Module's IP address, the bit corresponding to the personal computer's subnet mask 0 portion are all ON or OFF.

Example)

Module IP address	:	64. 64.255.255
Personal computer IP address	:	64. 64. 1. 1
Personal computer subnet mask	:	255.255. 0. 0

- When for each bit of the High Speed Data Logger Module's IP address/the High Speed Data Communication Module's IP address, the bits that correspond to the host address of each class for the personal computer's IP address are all ON or OFF

Example)

Module IP address	:	64. 64.255.255
Personal computer IP address	:	192.168. 0. 1
Personal computer subnet mask	:	255.255. 0. 0

Remark

- The IP address of each class is listed below.
Class A: 0.x.x.x to 127.x.x.x
Class B: 128.x.x.x to 191.x.x.x
Class C: 192.x.x.x to 223.x.x.x
- The host address of each class is the 0 portion below.
Class A: 255. 0. 0. 0
Class B: 255.255. 0. 0
Class C: 255.255.255. 0

2.4 Displaying Data Logged by Q/L Series Analog Module

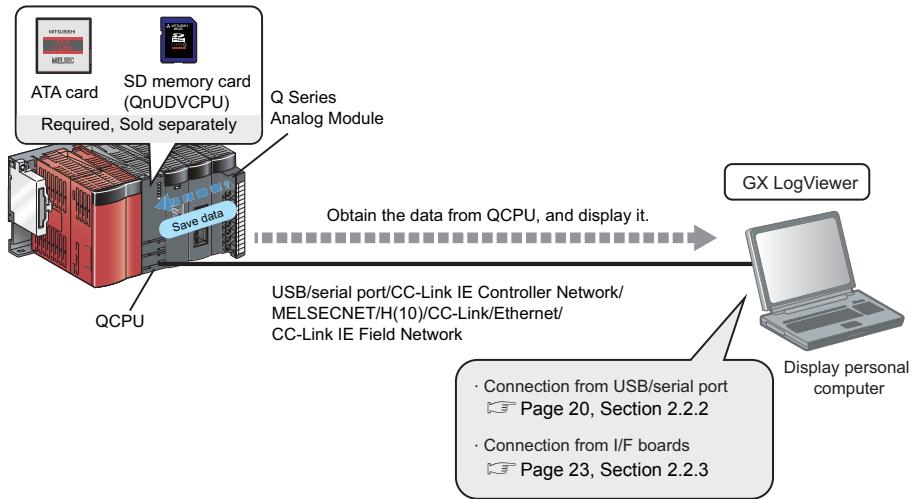


The logging data sampled by Q/L Series Analog Module is saved in an ATA card or an SD memory card. Therefore, connect to QCPU/LCPU when displaying sampled data on GX LogViewer.

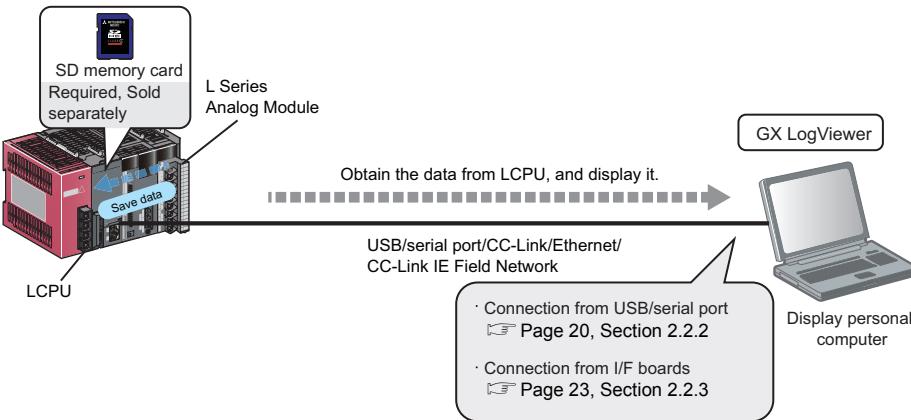
2.4.1 Details of system configuration

This section explains the system configuration when displaying data logged by Q/L Series Analog Module on GX LogViewer.

(1) Q Series Analog Module



(2) L Series Analog Module



- For saving data from Q/L Series Analog Module to a memory card, refer to the manual of each module.
- When using L60AD4, the logging function can be executed with a serial number whose first digits are '13041' or higher.

2.4.2 Connection from USB/Serial Port

The system configuration for connecting to a programmable controller CPU using the USB/serial port of a personal computer is the same as displaying data logged by QnUDVCPU/LCPU logging function.

For details, refer to the following section.

☞ Page 20, Section 2.2.2 Connection from USB/serial port

2.4.3 Connection from I/F boards

The system configuration for connecting to a programmable controller CPU using an I/F board mounted on the personal computer is the same as displaying data logged by QnUDVCPU/LCPU logging function.

For details, refer to the following section.

☞ Page 23, Section 2.2.3 Connection from I/F boards

2.5 Connection Precautions

QnUDVCPU **High Speed Data Logger** **High Speed Data Communication** **Q Analog** **LCPU** **L Analog**

The following are precautions when connecting a personal computer to a module using Ethernet.

(1) When the Windows firewall is ON

When connecting to High Speed Data Logger Module/High Speed Data Communication Module, disable the Windows firewall.

(2) When multiple IP addresses are enabled

Direct connection setup cannot be performed in a configuration where multiple IP addresses are enabled at the same time as shown below.

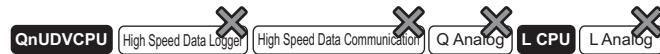
- An IP address is assigned to each of multiple Ethernet ports (network devices) of a personal computer.
- Aside from the Ethernet port of a personal computer, a wireless LAN setting is enabled.
- Multiple IP addresses are assigned to one Ethernet port of a personal computer.

CHAPTER 3 FUNCTION LIST

The following table shows the list of major functions of GX LogViewer.

For details on the functions, check the reference.

(1) List of functions for GX LogViewer when using QnUDVCPU, LCPU, or Q/L Analog Module



Item	Description	Reference
Assistant function	A function to guide users unfamiliar with the operation of GX LogViewer.	Page 64, CHAPTER 7
Connection setup	A function to setup a connection with a QCPU or an LCPU.	
Direct connection function	A function to connect a personal computer to a QCPU or an LCPU on a 1:1 basis using an Ethernet cable. They can be easily connected without concerning the IP address.	Page 72, Section 8.2
Module search function	A function to search for and connect to a Built-in Ethernet port CPU or an LCPU on the network.	
Trend graph function	A function to display data sampled by the data logging function as a graph.	
Historical trend	Displays the past data on the trend graph.	Page 87, CHAPTER 9
CSV file display	Displays data saved in CSV files.	
Register/reflect graphical display setting function	A function to register the display setting information of the trend graph being displayed, and reflect to another trend graph.	Page 144, Section 9.8
Automatic reflection of graph display function	A function to store the graph display information being displayed by each data logging setting, and reflect them automatically when open the trend window next time.	Page 148, Section 9.9
Restore graph display function	A function to restore the changed graph display information (graph color, etc.).	Page 148, Section 9.10
Logging file save function	A function to save logging files saved in the memory card to a personal computer.	Page 174, CHAPTER 11
Redisplay window/folder function	A function to save the following information and redisplay them easily. <ul style="list-style-type: none"> • Window layout and data of the trend window. • The folder path input to open the logging file. 	Page 176, CHAPTER 12
Displayed data save function	A function to save the data displayed in the trend graph and the events displayed in the event list to the personal computer as a CSV file or image file (BMP/JPG/PNG).	Page 184, Section 13.2
Trend graph print function	A function to print the trend graph displayed with the trend graph function.	Page 207, CHAPTER 14

(2) List of functions for GX LogViewer when using High Speed Data Logger Module



Item	Description	Reference
Assistant function	A function to guide users unfamiliar with the operation of GX LogViewer.	Page 64, CHAPTER 7
Connection setup	A function to setup a connection with a High Speed Data Logger Module.	
Direct connection function	A function to connect a personal computer to a High Speed Data Logger Module on a 1:1 basis using an Ethernet cable. They can be easily connected without concerning the IP address.	Page 79, Section 8.3
Module search function	A function to search for and connect to a High Speed Data Logger Module on the network.	
Trend graph function	A function to display data sampled by the data logging function as a graph.	
Historical trend	Displays the past data on the trend graph.	
Binary file display	Displays data saved in binary files.	
CSV file display	Displays data saved in CSV files.	
Realtime trend	A function to display current data on the trend graph.	
Binary file display	Displays data saved in binary files.	
CSV file display	Displays data saved in CSV files.	
Register/reflect graphical display setting function	A function to register the display setting information of the trend graph being displayed, and reflect to other trend graph.	Page 144, Section 9.8
Automatic reflection of graph display function	A function to store the graph display information being displayed by each data logging setting, and reflect them automatically when open the trend window next time.	Page 148, Section 9.9
Initialize graph display function	A function to initialize the changed graph display information (graph color, etc.).	Page 148, Section 9.10
Event monitoring function	A function to display events sampled by the event logging function as a list.	
Historical event	A function to display past events on the trend graph.	
Binary file display	Displays events saved in binary files.	
CSV file display	Displays events saved in CSV files.	
Realtime event	A function to display current events on the trend graph.	
Binary file display	Displays events saved in binary files.	
CSV file display	Displays events saved in CSV files.	
Logging file save function	A function to save logging files saved in the memory card to a personal computer.	Page 174, CHAPTER 11
Redisplay window/folder function	A function to save the following information and redisplay them easily. • Window layout and data of the trend window and the event window. • The folder path input to open the logging file.	Page 176, CHAPTER 12
Displayed data save function	A function to save the data displayed in the trend graph and the events displayed in the event list to the personal computer as a CSV file or image file (BMP/JPG/PNG).	Page 183, CHAPTER 13
Trend graph print function	A function to print the trend graph displayed with the trend graph function.	Page 207, CHAPTER 14

(3) List of functions for GX LogViewer when using High Speed Data Communication Module



Item	Description	Reference
Assistant function	A function to guide users unfamiliar with the operation of GX LogViewer.	Page 64, CHAPTER 7
Connection setup	A function to setup a connection with a High Speed Data Logger Module.	
Direct connection function	A function to connect a personal computer to a High Speed Data Logger Module on a 1:1 basis using an Ethernet cable. They can be easily connected without concerning the IP address.	Page 83, Section 8.4
Module search function	A function to search for and connect to a High Speed Data Logger Module on the network.	
Trend graph function	A function to display data sampled by High Speed Data Communication Module as a graph.	
Historical trend	Displays data on the trend graph by selecting the CSV file saved with the realtime trend from [File] on the menu.	
CSV file display	Displays data saved in CSV files.	Page 87, CHAPTER 9
Realtime trend	A function to display current data on the trend graph.	
CSV file display	Displays data saved in CSV files.	
Register/reflect graphical display setting function	A function to register the display setting information of the trend graph being displayed, and reflect to other trend graph.	Page 144, Section 9.8
Automatic reflection of graph display function	A function to store the graph display information being displayed by each label group setting, and reflect them automatically when open the trend window next time.	Page 148, Section 9.9
Initialize graph display function	A function to initialize the changed graph display information (graph color, etc.).	Page 148, Section 9.10
Redisplay window/folder function	A function to save the following information and redisplay them easily. <ul style="list-style-type: none"> • Window layout and data of the trend window and the event window. • The folder path input to open the logging file. 	Page 176, CHAPTER 12
Displayed data save function	A function to save the data displayed in the trend graph to the personal computer as a CSV file.	Page 183, CHAPTER 13
Trend graph print function	A function to print the trend graph displayed with the trend graph function.	Page 207, CHAPTER 14

CHAPTER 4 ACQUIRING AND STARTING GX LogViewer

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

4.1 Acquiring GX LogViewer

For the acquisition of GX LogViewer, contact your local Mitsubishi representative.

4.2 Installation

This section explains the installation and uninstallation procedure of GX LogViewer.

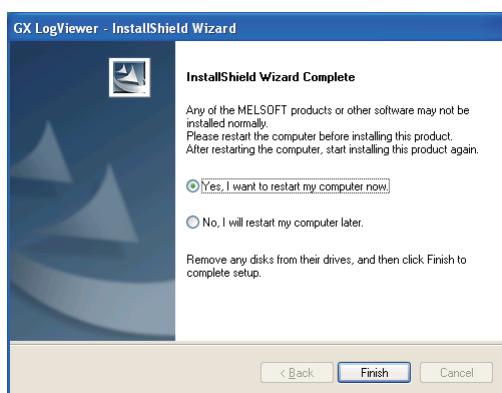
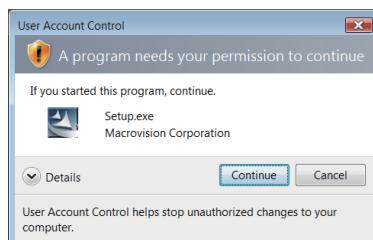
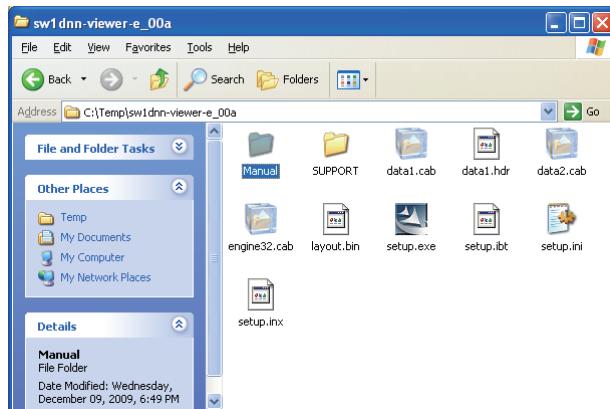
Point

- For Windows®8, .NET Framework 3.5 is required to be installed.
Select ".NET Framework 3.5 (includes .NET 2.0 and 3.0) in "Turn Window features on or off" on the Control Panel.
- Before installing GX LogViewer, close any other applications running on Windows®.
- The installer may not work normally because of the operating system's or other companies' update programs, such as Windows® Update or the Java update program, start automatically. Install GX LogViewer after configuring those update programs not to start automatically.
- When installing GX LogViewer, log on as a user with the Administrator authority.
- For the required personal computer operating environment to install GX LogViewer, refer to the following section.
☞ Page 18, Section 2.1 Operating Environment

4.2.1 Installation procedure

The following explains the installation procedure. Screens from Windows® XP are used except for different operations required in other operating systems.

Start installation



To the next page

1. Double click on "setup.exe" inside the extracted folder to start the installer.

4

< When using Windows Vista®, Windows® 7, or Windows® 8>

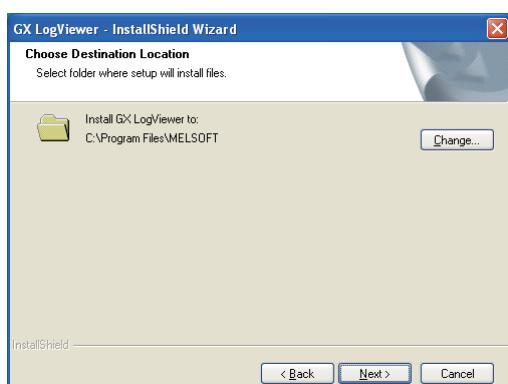
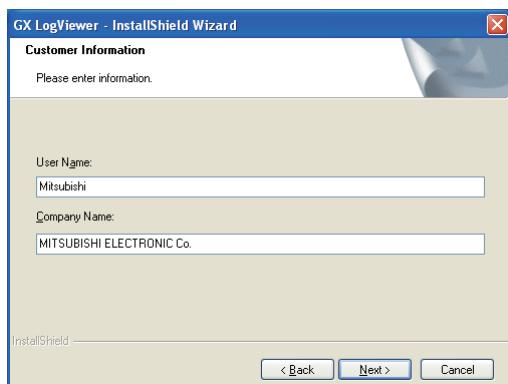
If User Account Control is turned ON, the message to confirm the activation of the installer is displayed as shown on the left.

(The screen image is from Windows Vista®.)

2. Click the **Continue** button. (For Windows® 7, or Windows® 8, click the **Yes** button.)

3. If the installation of the MELSOFT product or other S/W product has not been completed normally, the screen shown on the left is displayed and the installation cannot be continued until the system is restarted. In this case, restart Windows® and install the product again. (Return to step 1)

From the previous page



To the next page

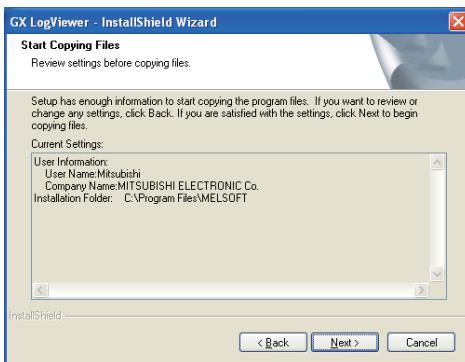
4. Check any other applications are not running, and click the **OK** button. (If any other applications are running, terminate them)

5. Click the **Next >** button.

6. Enter the user information and click the **Next >** button.

7. Select the installation target folder and click the **Next >** button.

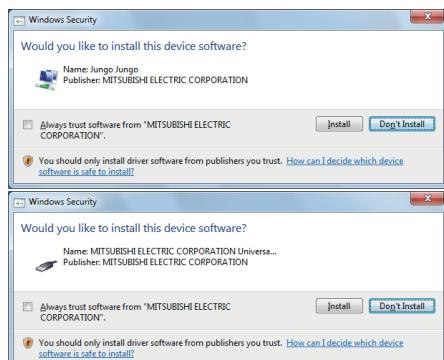
From the previous page



[The screen of Windows® XP]



[The screen of Windows Vista®, Windows® 7, and Windows® 8]



To the next page

8. Verify "Current Settings" of the installation and click the **Next > button.**

4

9. When installing a MELSOFT product for the first time, the screen shown on the left may be displayed. Click the following button to continue the installation.

Windows® XP: **Continue Anyway** button

Windows® Vista, Windows® 7, and Windows® 8:

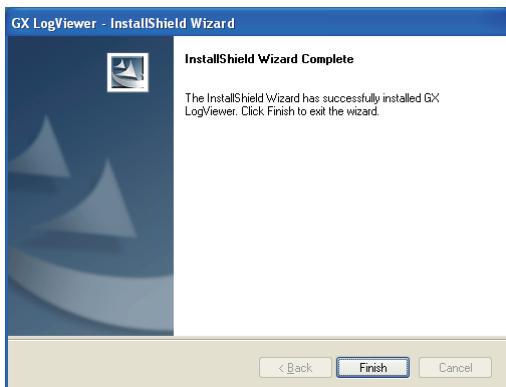
Install button

(The screen display may be different partially depending on the used operating system. This will not affect the operation.)

(We have checked the operation and confirmed that no error occurs after the installation. This screen may be displayed behind another screen. Press the

[Alt] + [Tab] keys to bring it forward.)

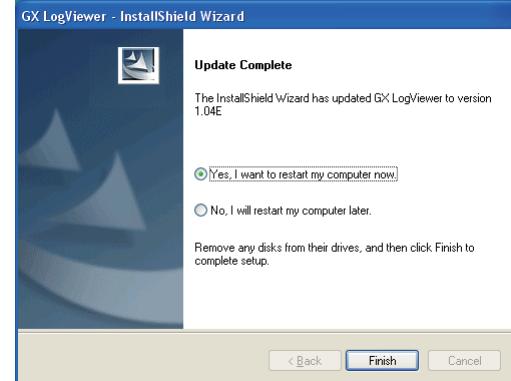
From the previous page



When the screen shown on the left is displayed, installation is complete.

10. Click the **Finish button and close the screen.**

When the following screen is displayed, select "Yes, I want to restart my computer now.".

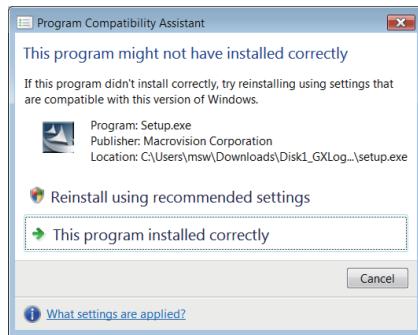


Installation complete

Point

- Program Compatibility Assistant screen

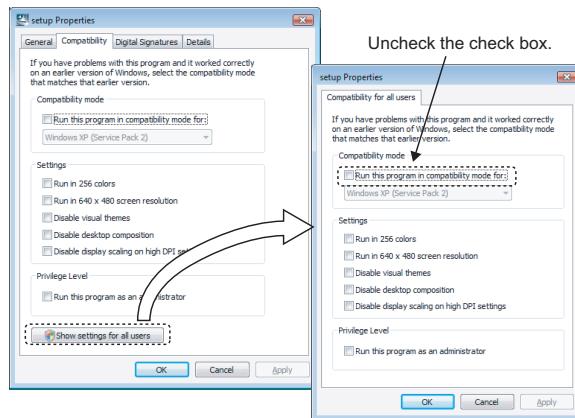
When using Windows Vista®, Windows® 7, or Windows® 8, the Program Compatibility Assistant screen may be displayed after the installation completion. Follow the procedure to finish the installation. (The following screen images are from Windows Vista®.)



1. Select "This program installed correctly".
2. Restart the Windows® operating system.

4

If "Reinstall using recommended settings" is selected by mistake, the 'Windows XP SP2 compatibility mode' is automatically set. Disable the 'Windows XP SP2 compatibility mode' by following the procedure described below, and install the product again.



1. Right-click on the **setup.exe** icon of the installation target in the Windows explorer, and open the setup Properties screen.
2. Select the <<Compatibility>> tab and click the **Show settings for all users** button.
3. Uncheck the "Run this program in compatibility mode for:" check box of compatibility mode in the <<Compatibility for all users>> tab, and click the **OK** button.
4. Click the **OK** button on the setup Properties screen.
5. Install the product again. (☞ Page 33, Section 4.2.1)

Remark

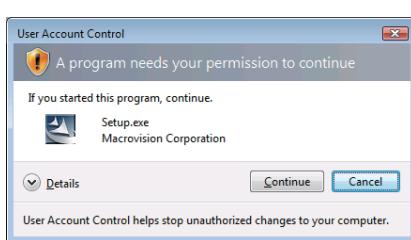
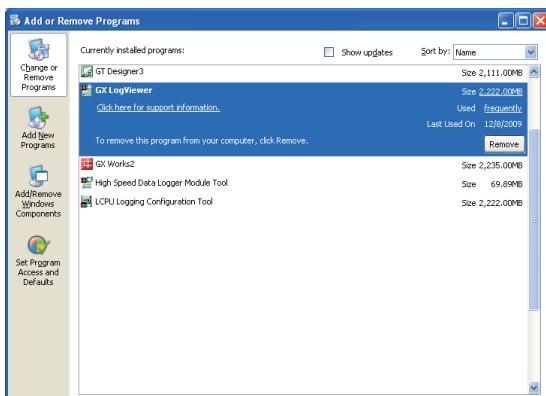
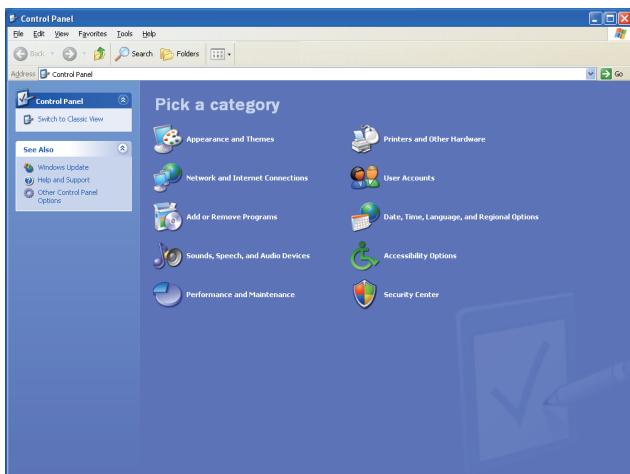
For the installation of the USB driver, refer to the following section.

☞ Page 216, Appendix 1 USB Driver Installation

4.2.2 Uninstallation procedure

The following explains the uninstallation procedure. Screens from Windows® XP are used except for different operations required in other operating systems.

Start uninstallation



To the next page

1. Select [Start] ⇒ [Control Panel] ⇒ "Add or Remove Programs".

< When using Windows Vista®, Windows® 7, or Windows® 8 >

Select [Start] ⇒ [Control Panel] ⇒ "Uninstall a program".

2. Select "GX LogViewer" from the list of programs and click the **Remove** button.

< When using Windows Vista®, Windows® 7, or Windows® 8 >

Select "GX LogViewer" from the programs and click "Uninstall".

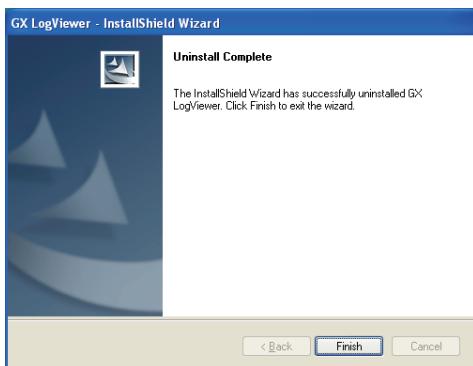
< When using Windows Vista®, Windows® 7, or Windows® 8 >

If User Account Control is turned ON, the message to confirm the activation of the installer is displayed as shown on the left.

(The screen image is from Windows Vista®.)

3. Click the **Continue** button. (For Windows® 7 and Windows® 8, click the **Yes** button.)

From the previous page



Uninstallation complete

4. Click the button.

When the screen shown on the left is displayed, uninstall is complete.

5. Click the button and close the screen.

4

4.3 Starting GX LogViewer

This section explains the method for starting GX LogViewer. The following are the two starting methods.

- Starting from the Start menu
- Starting from the configuration tool.

4.3.1 Starting from the Start menu

After installing GX LogViewer, it can be started with the operation below.

Operating procedure

 **Select [start] ⇒ [All Programs] ⇒ [MELSOFT Application]
⇒ [Logging Function] ⇒ [GX LogViewer].**

4.3.2 Starting from the configuration tool

After installing GX LogViewer, it can be started from the logging configuration tool or High Speed Data Logger Module configuration tool with the operation below.

Operating procedure

1. **Start the logging configuration tool or High Speed Data Logger Module configuration tool.**
2.  **Select [Tool] ⇒ [Start GX LogViewer].**

CHAPTER 5 OPERATION FLOWS

This section explains the operation flows to display data and events sampled by module or sampling trace data saved with GX Works2 on GX LogViewer.

Item	Reference
When using QnUDVCPU/LCPU or Q/L Series Analog Module	
Operation flow for a user using GX LogViewer for the first time	Page 42, Section 5.1.1
Operation flow for the basic operations of GX LogViewer	Page 43, Section 5.1.2
Operation flow for an experienced user of GX LogViewer	Page 44, Section 5.1.3
When using High Speed Data Logger Module	
Operation flow for a user using GX LogViewer for the first time	Page 45, Section 5.2.1
Operation flow for the basic operations of GX LogViewer	Page 46, Section 5.2.2
Operation flow for an experienced user of GX LogViewer	Page 47, Section 5.2.3
When using High Speed Data Communication Module	
Operation flow for a user using GX LogViewer for the first time	Page 48, Section 5.3.1
Operation flow for the basic operations of GX LogViewer	Page 49, Section 5.3.2
Operation flow for an experienced user of GX LogViewer	Page 50, Section 5.3.3
When Using Energy Measuring Unit	
Operations flow When displaying sampling trace data	Page 51, Section 5.5
Operations while trend graphs are displayed	Page 52, Section 5.6
Operations while event list is displayed.	Page 52, Section 5.7

Point

The sampled logging data is saved in a memory card installed on a module.

Therefore, select the logging file in the memory card installed on the module when displaying sampled data on GX LogViewer.

The save destination memory card type for each module is shown below.

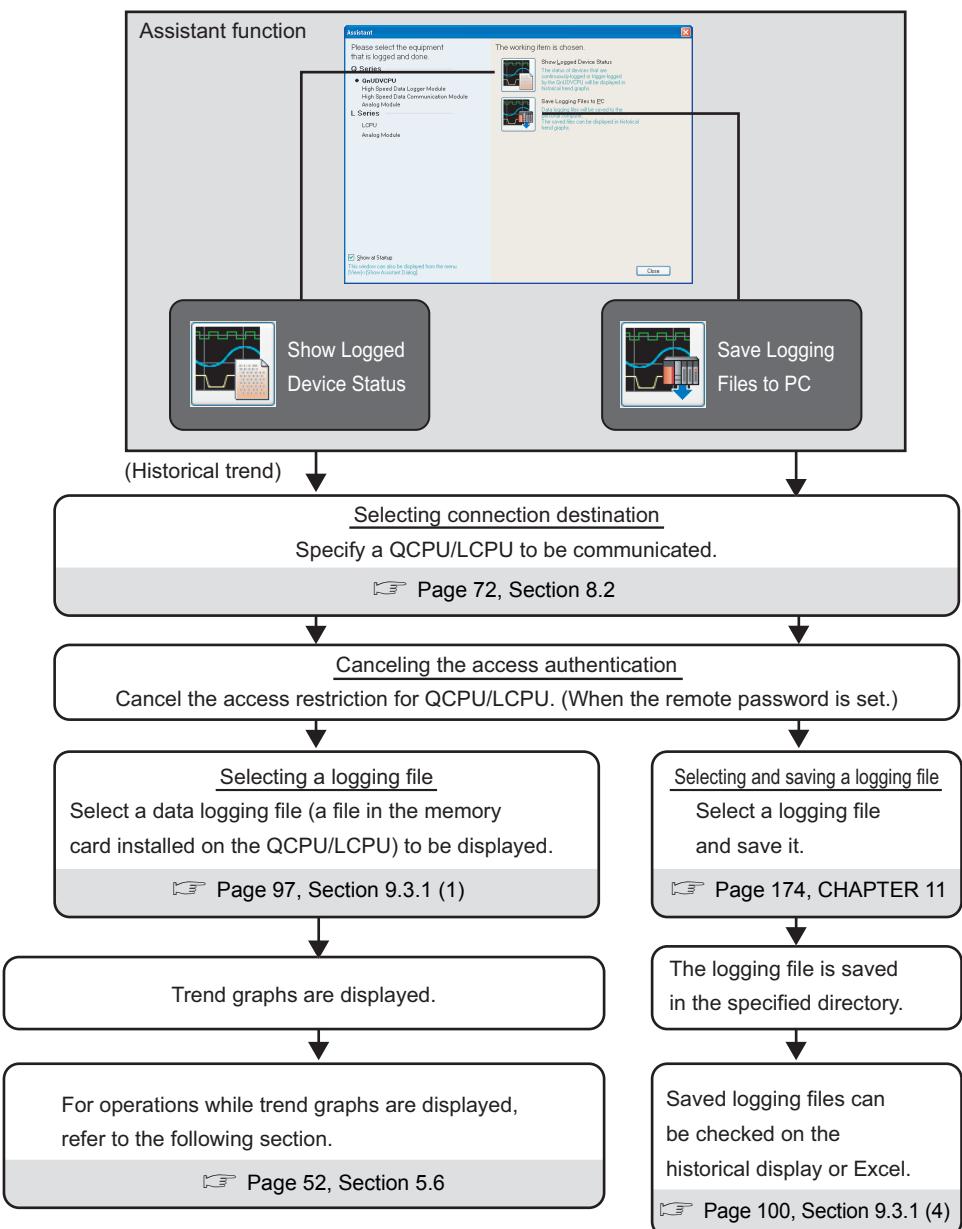
CPU module	Save destination memory card type
QCPU (excluding QnUDVCPU)	ATA card
QnUDVCPU	SD memory card
LCPU	
High Speed Data Logger Module	CompactFlash Card
Energy Measuring Unit	SD memory card

5.1 When Using QnUDVCPU/LCPU or Q/L Series Analog Module

5.1.1 Operation flow for a user using GX LogViewer for the first time



Use the assistant function (☞ Page 64, CHAPTER 7) when using GX LogViewer for the first time.



Point

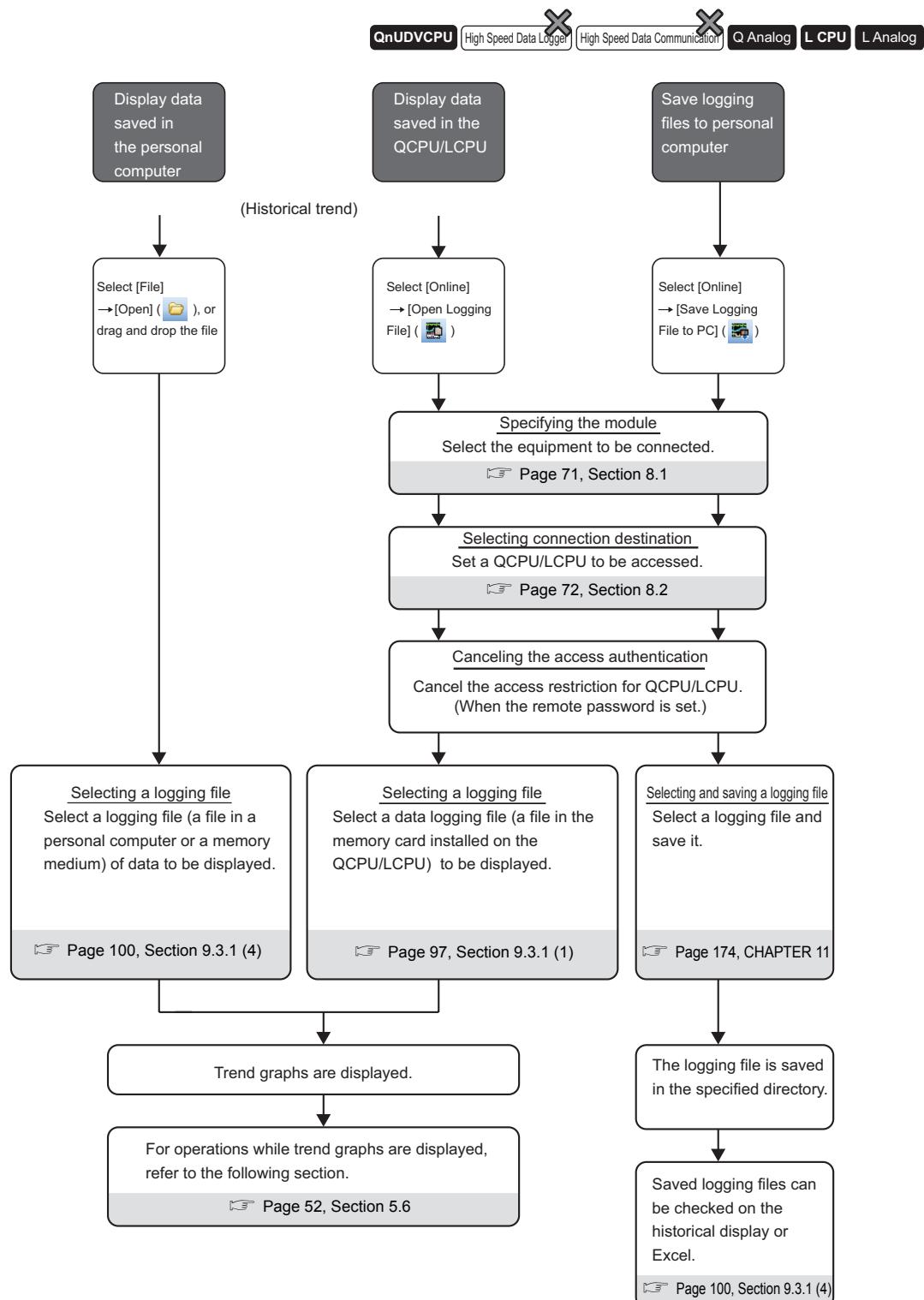
For details of remote password, refer to the following manual.

Qn(H)/QnPH/QnPRHCPU User's Manual (Function Explanation, Program Fundamentals)

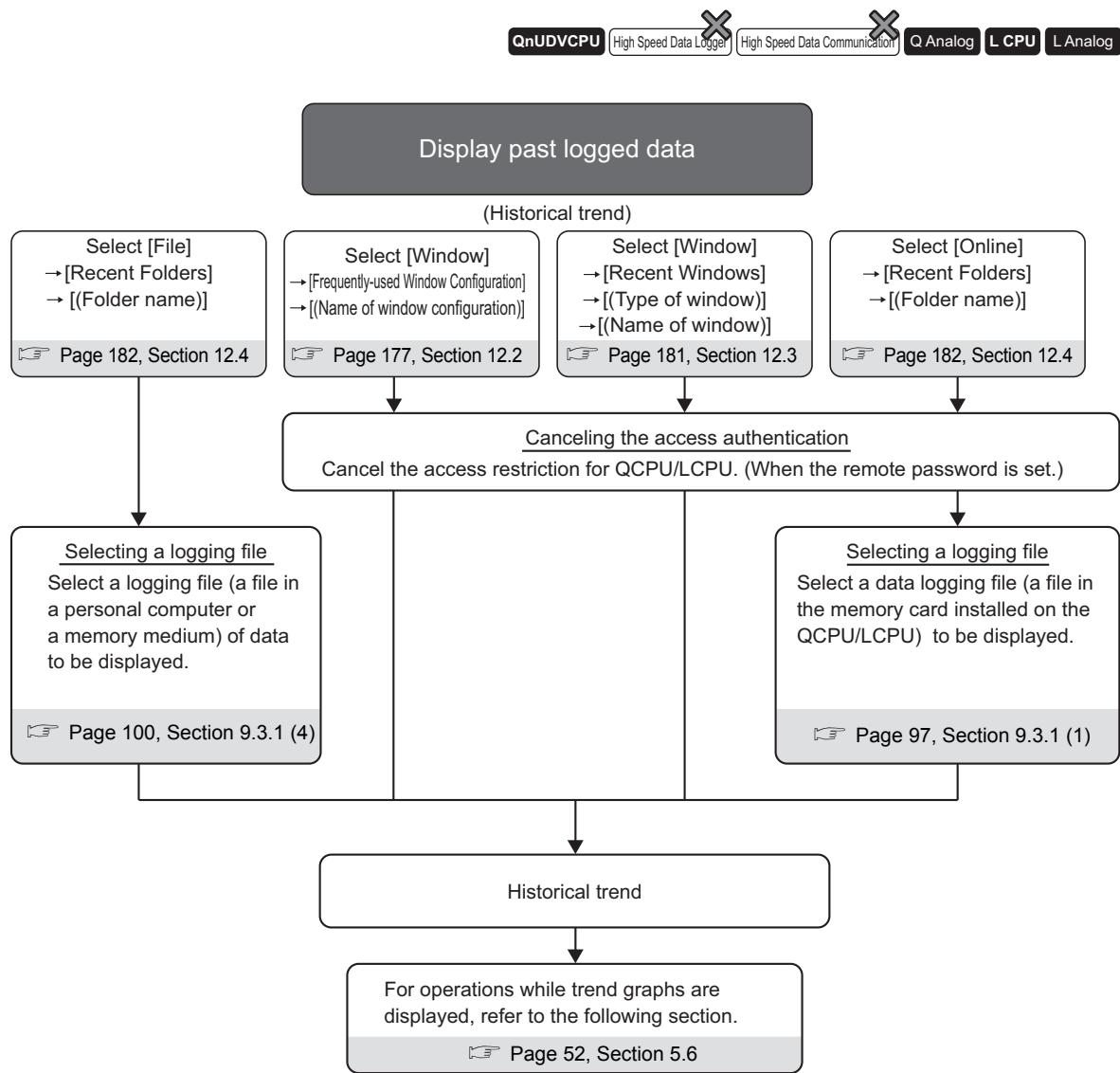
QnUCPU User's Manual (Function Explanation, Program Fundamentals)

MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

5.1.2 Operation flow for the basic operations of GX LogViewer



5.1.3 Operation flow for an experienced user of GX LogViewer



Point

For details of remote password, refer to the following manual.

Qn(H)/QnPH/QnPRHCPU User's Manual (Function Explanation, Program Fundamentals)

QnUCPU User's Manual (Function Explanation, Program Fundamentals)

MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

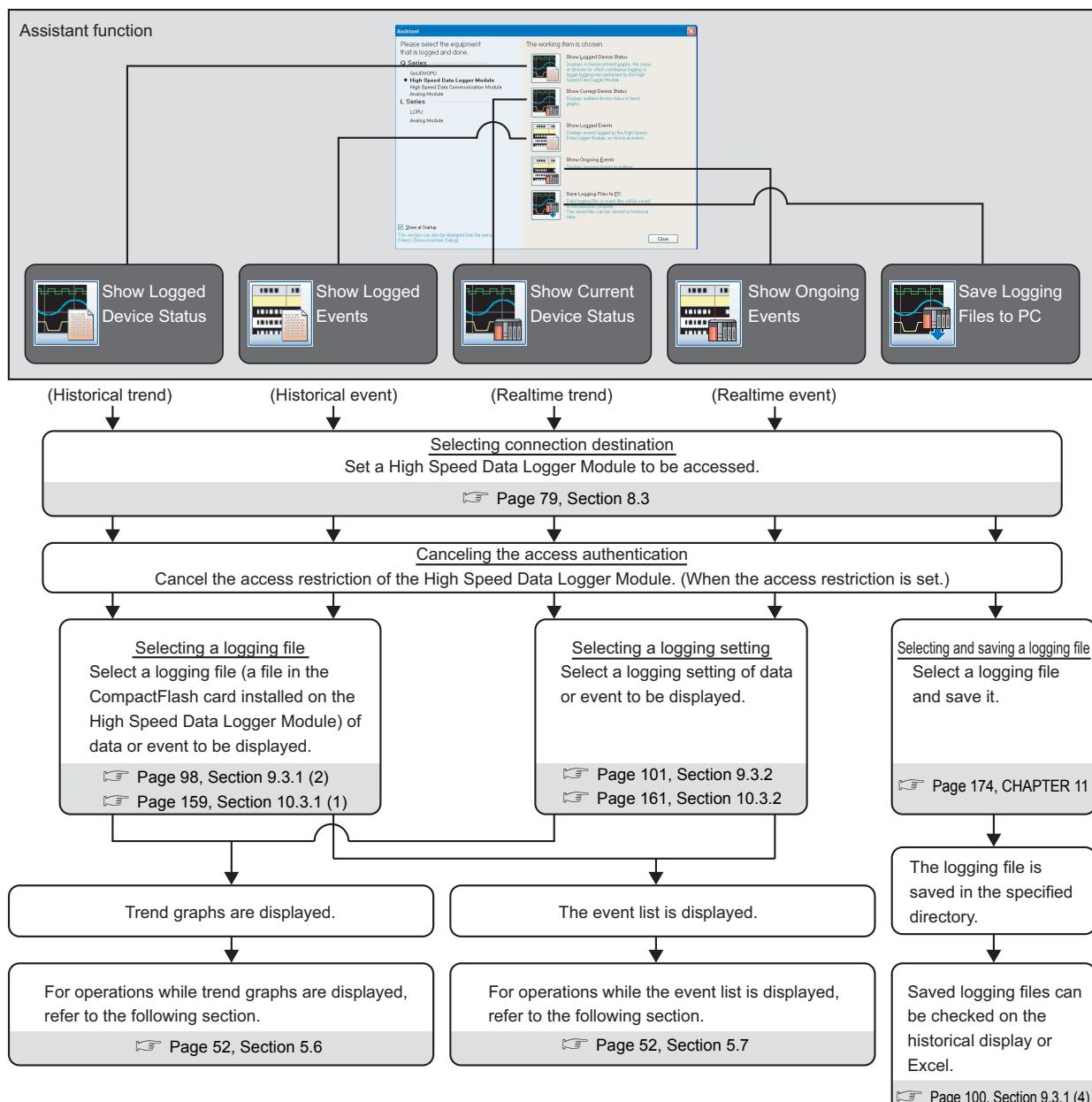
5.2 When Using High Speed Data Logger Module

When displaying the sampled data on GX LogViewer, select a logging file in a memory card or a logging setting being executed.

5.2.1 Operation flow for a user using GX LogViewer for the first time



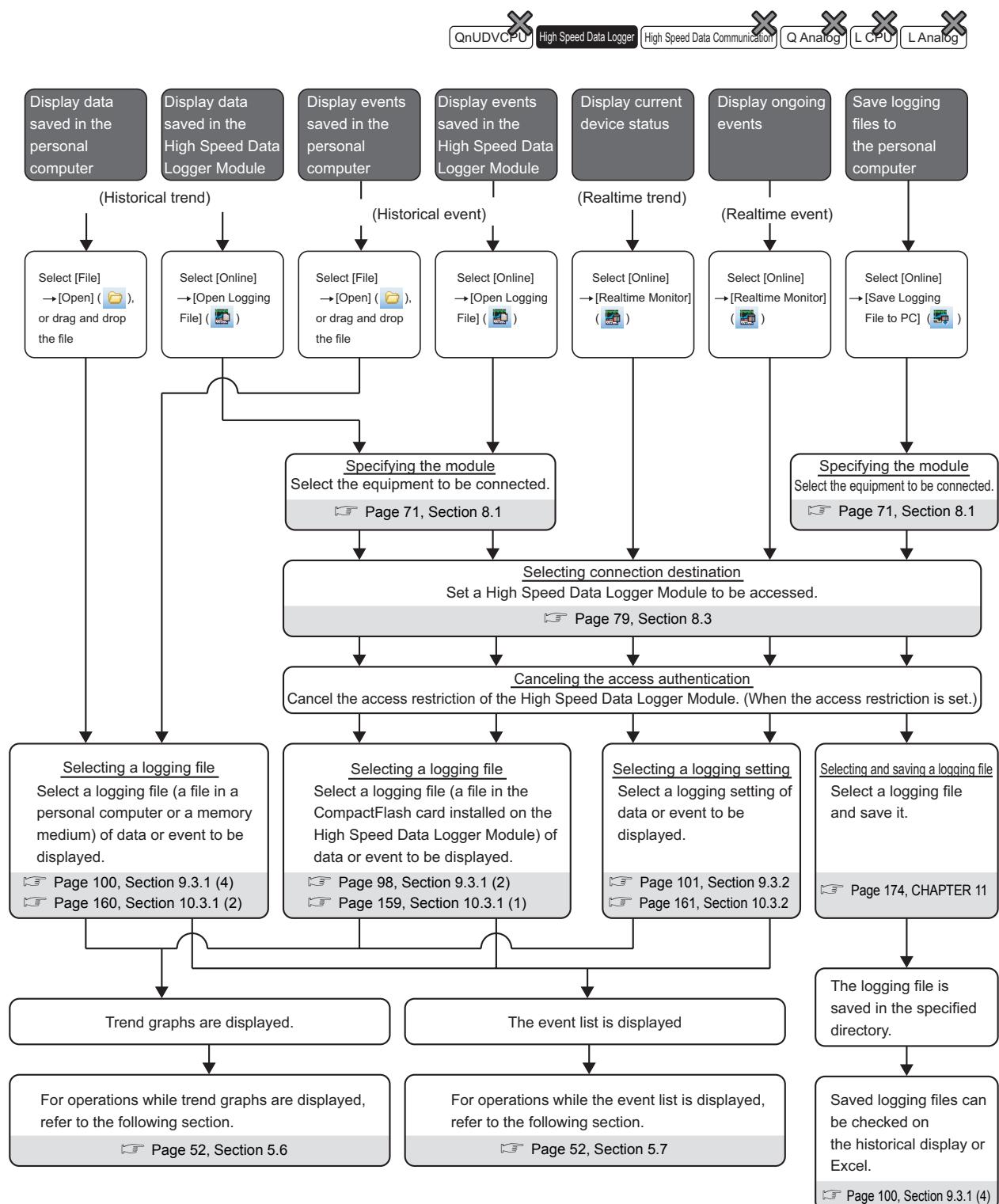
Use the assistant function (☞ Page 64, CHAPTER 7) when using GX LogViewer for the first time.



For details of the access authentication, refer to the following manual.

☞ High Speed Data Logger Module User's Manual

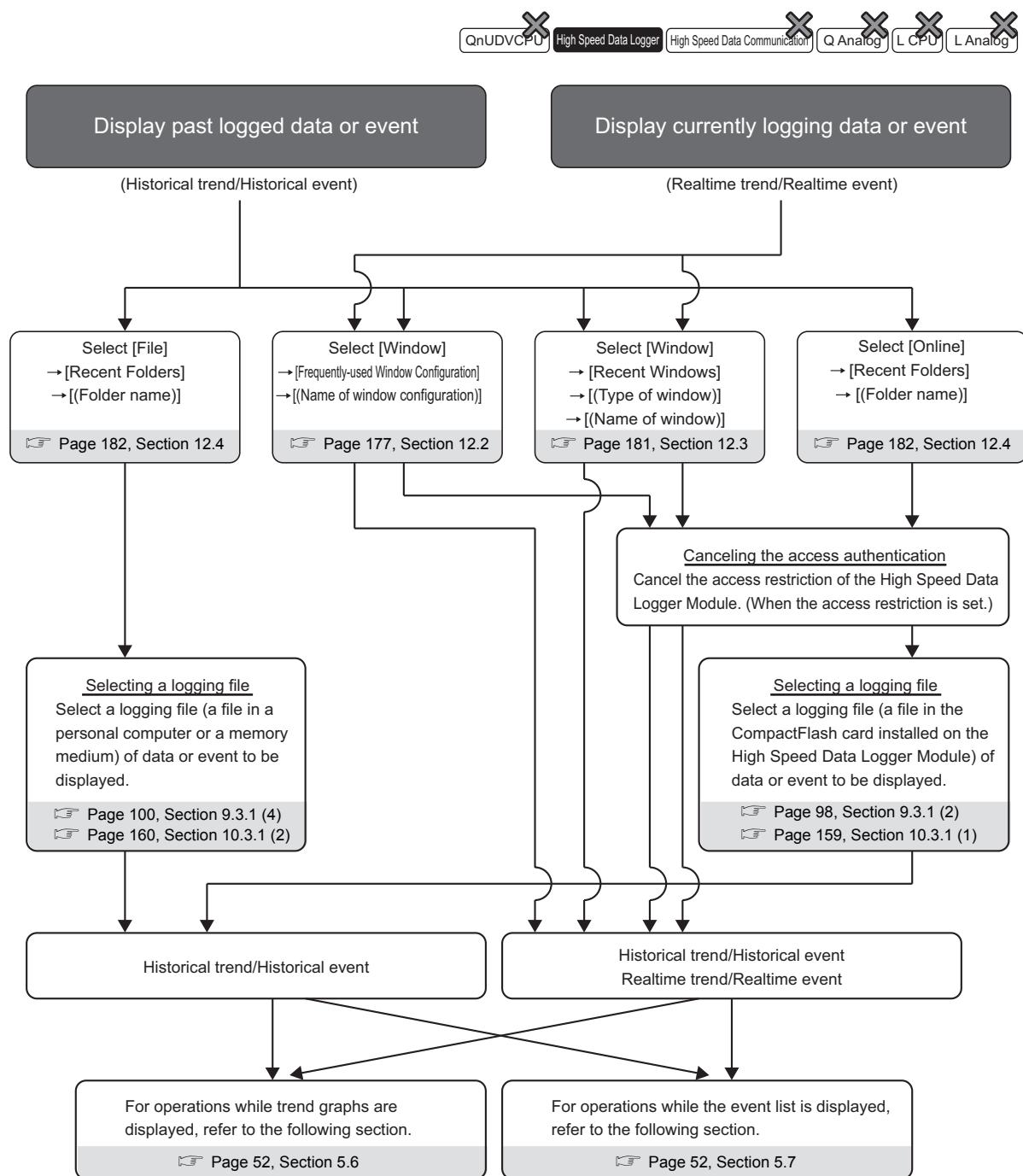
5.2.2 Operation flow for the basic operations of GX LogViewer



Point

For details of the access authentication, refer to the following manual.
 High Speed Data Logger Module User's Manual

5.2.3 Operation flow for an experienced user of GX LogViewer



Point

For details of the access authentication, refer to the following manual.
High Speed Data Logger Module User's Manual

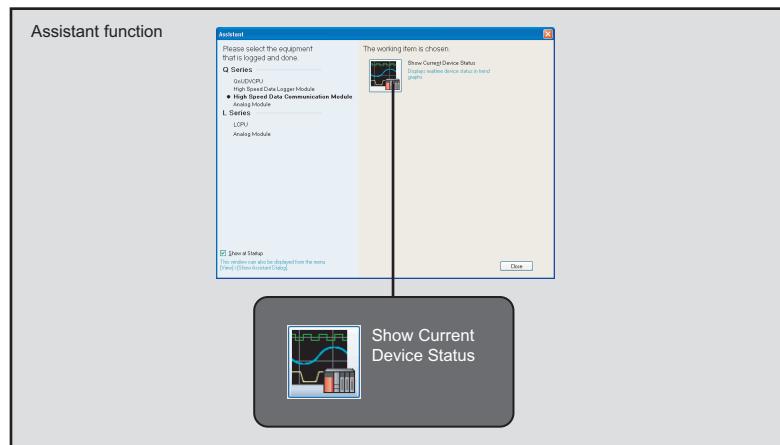
5.3 When Using High Speed Data Communication Module

When displaying the sampled data on GX LogViewer, select a logging setting being executed.

5.3.1 Operation flow for a user using GX LogViewer for the first time



Use the assistant function (☞ Page 64, CHAPTER 7) when using GX LogViewer for the first time.



(Realtime trend)

Selecting connection destination

Set a High Speed Data Communication Module to be accessed.

☞ Page 83, Section 8.4

Canceling the access authentication

Cancel the access restriction of the High Speed Data Communication Module. (When the access restriction is set.)

Selecting a logging file

Select a logging file to be displayed.

☞ Page 102, Section 9.3.2 (2)

Trend graphs are displayed.

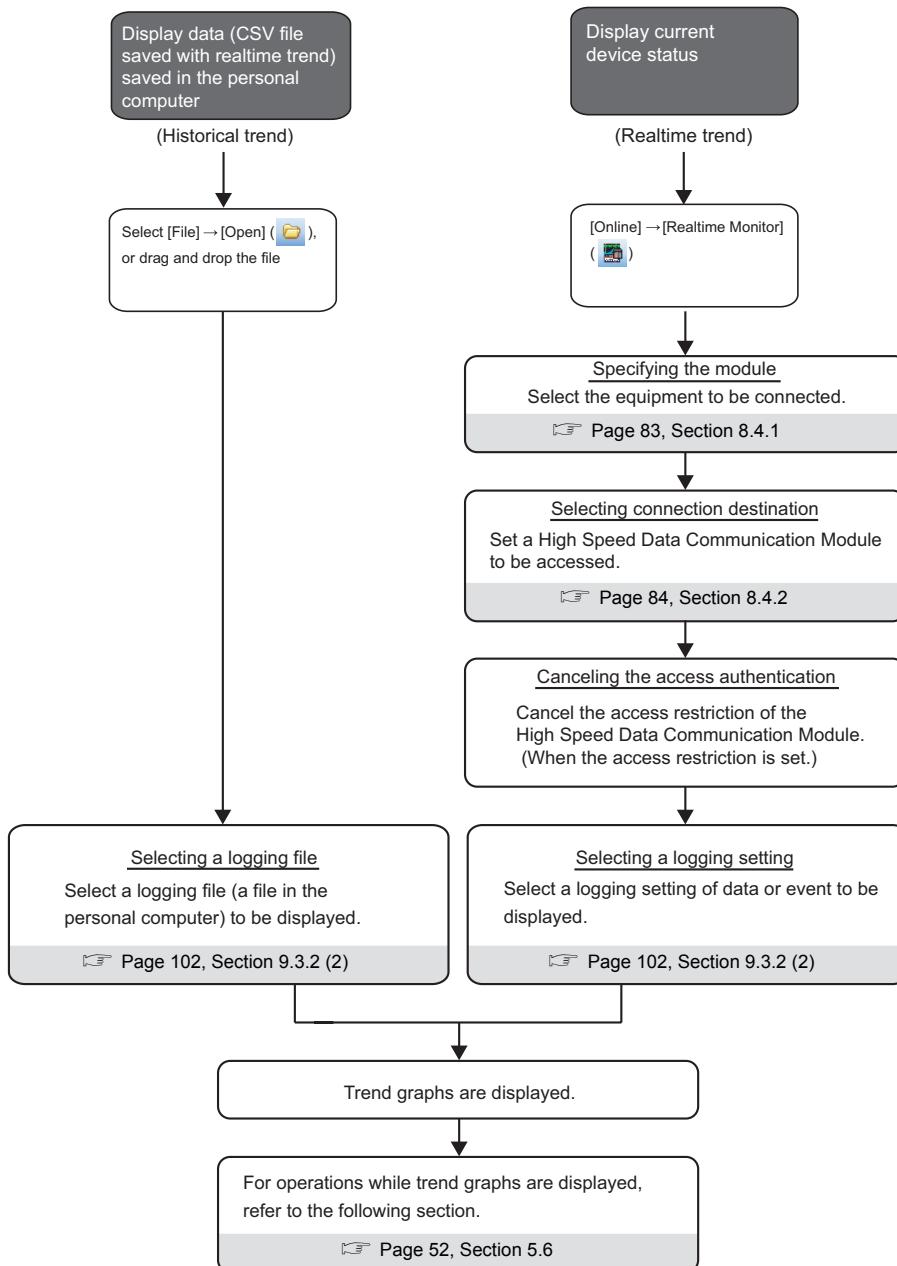
For operations while trend graphs are displayed,
refer to the following section.

☞ Page 52, Section 5.6



For details of remote password, refer to the following manual.
☞ High Speed Data Communication Module User's Manual

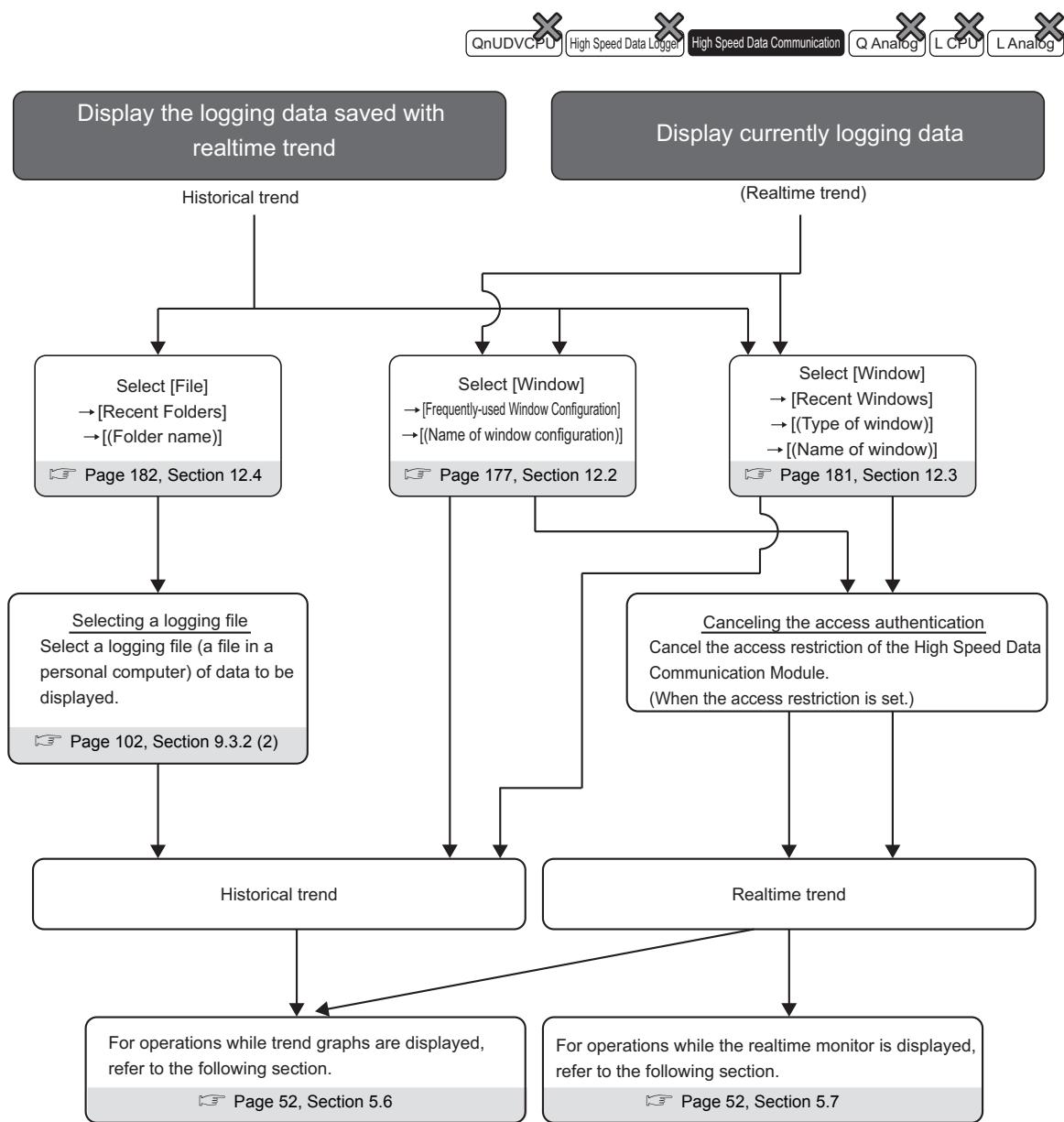
5.3.2 Operation flow for the basic operations of GX LogViewer



Point

For details of remote password, refer to the following manual.
📖 High Speed Data Communication Module User's Manual

5.3.3 Operation flow for an experienced user of GX LogViewer



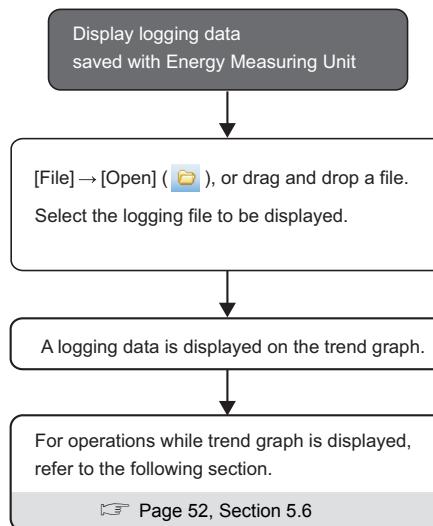
Point

For details of remote password, refer to the following manual.
☞ High Speed Data Communication Module User's Manual

5.4 When Using Energy Measuring Unit

When displaying a sampled data on GX LogViewer, select the logging file saved in a personal computer or an SD memory card installed on a personal computer.

For the saving methods of logging data in CSV file format, refer to the manual of Energy Measuring Unit.



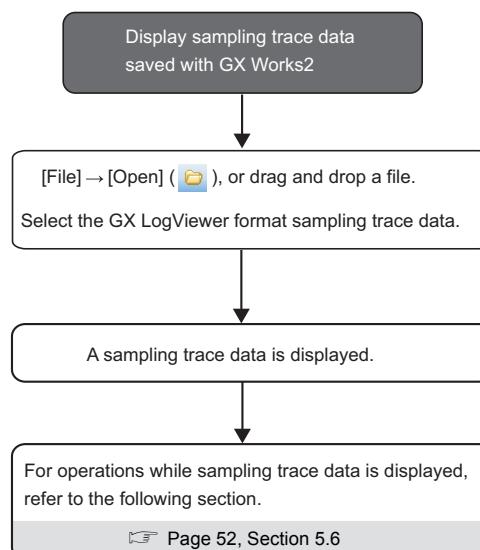
5

5.5 Operation flow when displaying sampling trace data

Displaying sampling trace data in GX LogViewer format saved with GX Works2.

For operations saving sampling trace data in GX LogViewer format, refer to the following manual.

GX Works2 Version 1 Operating Manual (Common)



Point

Saving sampling trace data in GX LogViewer format is applicable when using GX Works2 Version 1.91V or later.

5.6 Operations while trend graphs are displayed

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

Checking data using a cursor.

☞ Page 106, Section 9.4.1

Adjusting trend graphs.
(Moving, zooming in/out, arranging, etc.)

☞ Page 111, Section 9.5

Changing display items in graph area.
(Multiple cursor, cursor labels, etc.)

☞ Page 134, Section 9.6

Changing graph appearance.
(Color, line type, line thickness, etc.)

☞ Page 138, Section 9.7

Registering the configuration of frequently-used window to the menu.

☞ Page 177, Section 12.2

Saving displayed data in the CSV format or the image format.

☞ Page 184, Section 13.2

Printing trend graphs.

☞ Page 207, CHAPTER 14

5.7 Operations while event list is displayed

QnUDVCPU X High Speed Data Logger X High Speed Data Communication X Q Analog X LCPU X L Analog

Changing display settings of event list.
(Text color, display item, etc.)

☞ Page 171, Section 10.5

Operating an event list.
(Sorting, filtering, etc.)

☞ Page 163, Section 10.4

Saving displayed events in the CSV format or the image format.

☞ Page 203, Section 13.3

Registering the configuration of frequently-used window to the menu.

☞ Page 177, Section 12.2

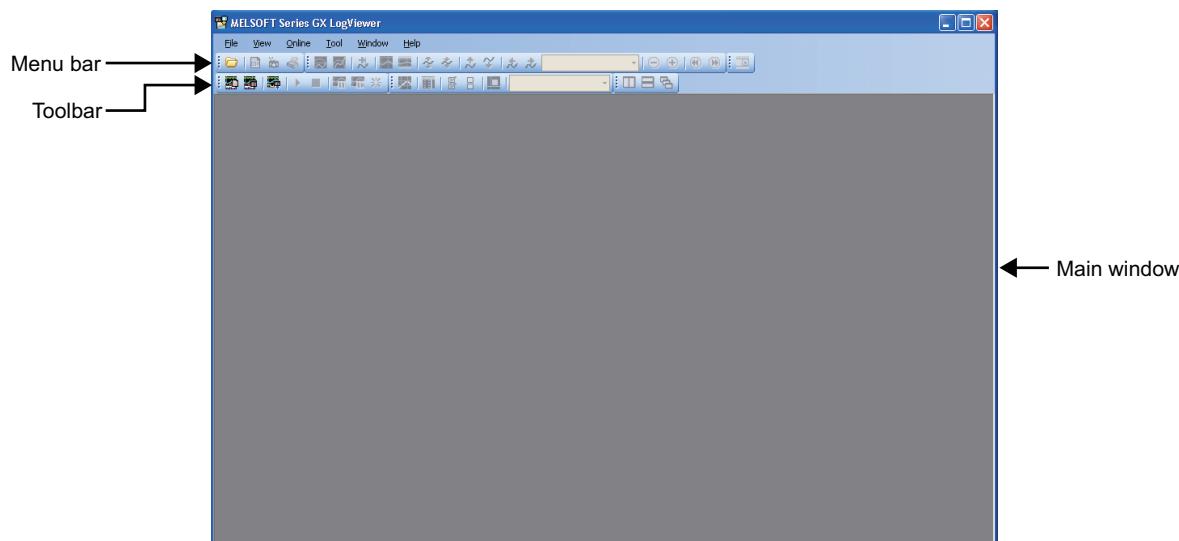
CHAPTER 6 SCREEN CONFIGURATION

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

6.1 Main Window

The following figure shows the main window configuration of GX LogViewer.

Screen display



6

Item	Description	Reference
Main window	An entire screen that displays a menu bar, a toolbar and child windows.	-
Menu bar	Displays menu options for executing each function.	Page 56, Section 6.3
Toolbar	Displays tool buttons for executing each function.	Page 61, Section 6.4

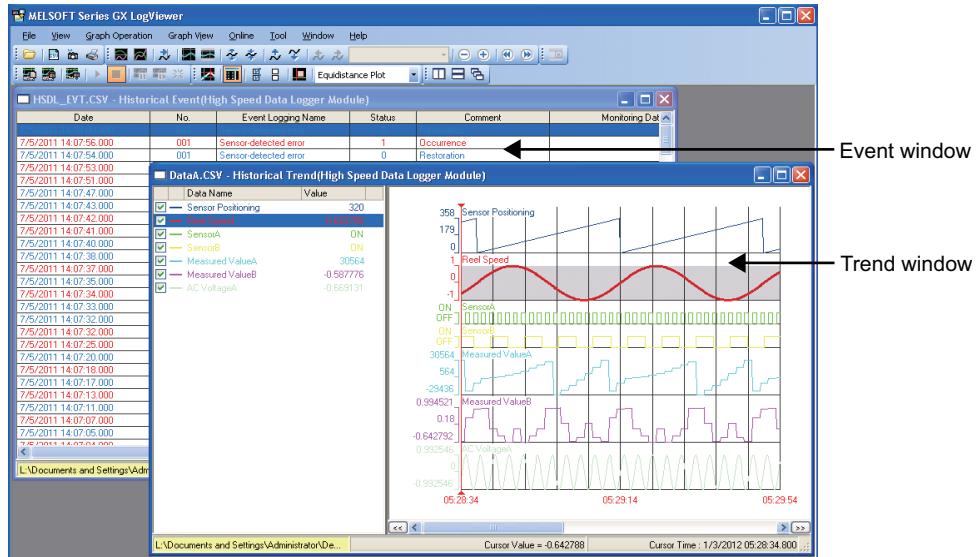
Remark

Only one main window can be displayed on the screen since multiple GX LogViewer cannot be activated.

6.2 Child Windows

Child windows (trend windows and/or event windows) are displayed in the main window.
Child windows can be displayed on a per-logging-setting basis or a per-logging-file basis.

Screen display



For details of trend window and event window displayed in the main window, refer to the following chapters.

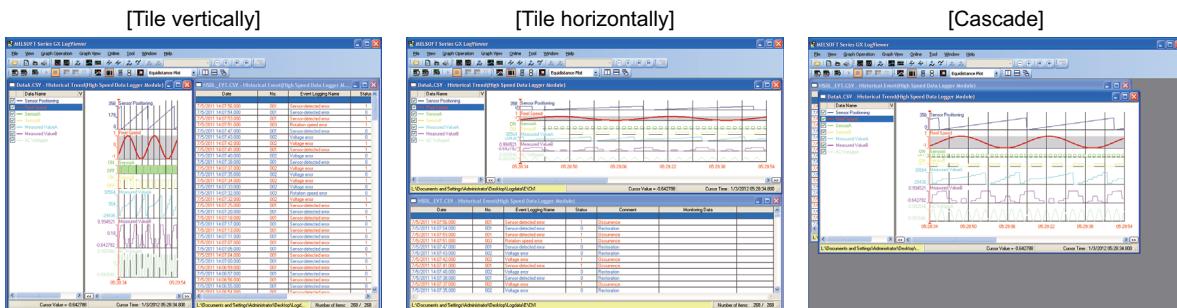
Name	Function	Reference
Trend window	Trend graph function	Page 87, CHAPTER 9
Event window	Event monitoring function	Page 153, CHAPTER 10

(1) Tiling windows vertically/horizontally, or cascading windows

All displayed child windows can be tiled vertically/horizontally, or cascaded by the following operation.

Operating procedure

Ⓐ [Window] ⇒ [Tile Vertically]() / [Tile Horizontally]() / [Cascade]()



(2) Bringing hidden window to front

Select a file name, data logging setting or event logging setting by the following operation to bring the selected child window to the front.

Operating procedure

 [Window] ⇒ [(window name)]

Point

- The maximum of two screens can be displayed simultaneously when executing realtime monitor (realtime trend and realtime event) with a single High Speed Data Logger Module.
- The number of realtime monitor (realtime trend) which can be displayed simultaneously with a single High Speed Data Communication Module is shown below.
 - High speed sampling: maximum of two screens
 - General sampling: maximum of four screens (when using two screens for high speed sampling, the total of two screens can be displayed for general sampling)

Remark

The maximum number of simultaneous access for a single module differs depending on the module.

6.3 Menu Configuration

The following tables show the menu configuration of GX LogViewer.

(1) File

Item	Description	Reference
Open	Opens a file saved in a personal computer.	Page 100, Section 9.3.1 (4) Page 160, Section 10.3.1 (2)
Recent Folders	Opens a folder used recently in a personal computer.	Page 182, Section 12.4
Close	Closes an active window in the main window.	-
Save As	-	Page 183, CHAPTER 13
Save CSV File	Saves data or events displayed on a trend window or event window in the CSV file format.	
Save Image File	Saves graphic image displayed on a trend window or event window in the image file format.	
Print	Prints trend graphs.	Page 207, CHAPTER 14
Import and Export	Reads/writes files to utilize the settings between other users or personal computers.	Page 144, Section 9.8 Page 177, Section 12.2
Exit	Exits GX LogViewer.	-

(2) View

Item	Description	Reference
Toolbar	-	Page 61, Section 6.4
Standard	Display/hides the "Standard" toolbar.	Page 61, Section 6.4 (1)
Online	Display/hides the "Online" toolbar.	Page 61, Section 6.4 (2)
Graph Operation	Display/hides the "Graph Operation" toolbar.	Page 62, Section 6.4 (3)
Graph View	Display/hides the "Graph View" toolbar.	Page 62, Section 6.4 (4)
Event	Display/hides the "Event" toolbar.	Page 63, Section 6.4 (5)
Window	Display/hides the "Window" toolbar.	Page 63, Section 6.4 (6)
Show Assistant Dialog	Displays the <u>Assistant</u> screen to guide a user according to the purpose.	Page 64, CHAPTER 7

(3) Graph Operation

Item	Description	Reference
Graph Alignment	Aligns and displays trend graphs displayed in a graph area not to superimpose.	Page 114, Section 9.5.2
Graph Superimpose	Superimposes and displays trend graphs displayed in a graph area.	Page 115, Section 9.5.3
Jump Cursor	Displays the <u>Jump Cursor</u> screen.	Page 116, Section 9.5.4
Auto Adjust Upper/Lower Bound	-	Page 123, Section 9.5.5
For Period on Display	Automatically sets the upper/lower limit display value of the trend graph by the upper/lower limit value of the graph displayed within the screen frame.	
For All Period	Automatically sets the upper/lower limit display value of the trend graph by the upper/lower limit value of the entire graph.	
Edit Upper/Lower Bound	Displays a text box to specify the upper/lower limit display value of the trend graph.	

(To the next page)

(From the previous page)

Item	Description	Reference
Adjust Scale	-	-
Widen Graph	Scales up the selected trend graph in a vertical direction.	Page 126, Section 9.5.6
Narrow Graph	Scales down the selected trend graph in a vertical direction.	
Adjust Graph Location	-	
Move Up Graph	Moves the selected trend graph upward.	
Move Down Graph	Moves the selected trend graph downward.	
Move Graph to Left	Moves the selected trend graph to left.	
Move Graph to Right	Moves the selected trend graph to right.	
Horizontal Moving Quantity	When moving the selected trend graph to left or right, set the time unit to be moved.	
Adjust Time Scale	-	
Expansion Time Scale	Expands the time scale of the graph area.	
Reduction Time Scale	Reduces the time scale of the graph area.	
Show Previous Graph	Consecutively displays the trend graphs displayed on the historical window and the trend graphs of previous data logging file.	
Show Next Graph	Consecutively displays the trend graphs displayed on the historical window and the trend graphs of next data logging file.	

(4) Graph View

Item	Description	Reference
Multiple Cursor	Displays/hides the second cursor.	Page 134, Section 9.6.1
Cursor Label	Displays/hides cursor labels.	Page 135, Section 9.6.2
Graph Highlight	Displays/hides graph highlight.	Page 143, Section 9.7.2
Bold Line	Thickens a line of the selected trend graph.	Page 143, Section 9.7.3
Data Name	Displays/hides the data names.	Page 135, Section 9.6.3
Plot Format	-	
Equidistance Plot	Switch the graph format displaying on a historical trend window to equidistance plot format.	
Time Interval Plot	Switch the graph format displaying on a historical trend window to time interval plot.	
Time Label	-	
Time	Displays the time on the time scale.	
Date	Displays the date on the time scale.	
Date and Time	Displays the date and time on the time scale.	
Index	Displays the index on the time scale.	
Set Language	Displays data names in a selected language or character code.	Page 137, Section 9.6.6
Chinese Simplified		
Chinese Traditional		
English		
Japanese		
Korean		
Unicode (UTF-8)		
Graph Legends	Displays/hides the graph legend area.	Page 91, Section 9.2.2
Show All Graphs	Displays trend graphs of all data in the graph legend area.	
Hide All Graphs	Hides trend graphs of all data in the graph legend area.	
Change the Data to Draw Graphs	Displays a screen for adding/deleting data to be drawn.	Page 108, Section 9.4.2

Item	Description	Reference
Register Graphical Display Settings	Registers the display settings of data in the trend graphs.	Page 144, Section 9.8
Operate Graphical Display Settings	Reflects the display settings of registered data to the trend window.	
Set Graph View by the Auto Reflect Function	Stores the graph display information being displayed by each data logging setting, and reflect them automatically when open the trend window next time.	Page 148, Section 9.9
Initialize Graph View	Initializes changed graph display information(graph color, etc.).	Page 148, Section 9.10
Graph Properties	Displays the <u>Graph Properties</u> screen for setting the trend graph functions.	Page 138, Section 9.7.1

(5) Event

Item	Description	Reference
Filter	Displays/hides the filtered lines.	Page 163, Section 10.4.1
Sort by	-	Page 165, Section 10.4.2
Date	Switches the ascending/descending order by date.	
No.	Switches the ascending/descending order by number.	
Event Logging Name	Switches the ascending/descending order by event logging name.	
Status	Switches the ascending/descending order by status.	
Comment	Switches the ascending/descending order by comment.	
Monitoring Data	Switches the ascending/descending order by monitoring data.	
Set Language	Displays event logging names and comments in a selected language or character code.	Page 166, Section 10.4.3
Chinese Simplified		
Chinese Traditional		
English		
Japanese		
Korean		
Unicode (UTF-8)		
Show Previous Event	Consecutively displays the events displayed on the historical event window and the events of previous event logging file.	Page 166, Section 10.4.4
Show Next Event	Consecutively displays the events displayed on the historical event window and the events of next event logging file.	
Event Properties	Displays the Event Properties screen for setting the event monitor functions.	Page 171, Section 10.5

(6) Online

Item	Description	Reference
Open Logging File	Opens the logging files in the memory card installed on the module.	Page 96, Section 9.3.1 Page 158, Section 10.3.1
Realtime Monitor	Displays the data or events being sampled by the High Speed Data Logging Module. Displays the data being sampled by the High Speed Data Communication Module.	Page 101, Section 9.3.2 Page 161, Section 10.3.2
Recent Folders	Displays the recently used folder in the memory card installed on the module.	Page 182, Section 12.4
Save Logging File to PC	Saves logging files to a personal computer in the memory card installed on the module.	Page 174, CHAPTER 11
Begin Monitor	Starts monitoring the realtime trend graphs/realtime event monitor.	Page 104, Section 9.3.3
End Monitor	Stops monitoring the realtime trend graphs/realtime event monitor.	
Pause Monitor	Pauses the drawing of the realtime trend graphs. (However, the communication with the high speed data logger is not disconnected.)	
Restart Monitor	Restart the drawing of the paused realtime trend graphs.	
Clear Graph	Clears the graphs and restarts the drawing of the graphs.	

(7) Tool

Item	Description	Reference
Start High Speed Data Logger Module Configuration Tool* ¹	Activates the High Speed Data Logger Module configuration tool.	-
Start High Speed Data Communication Module Configuration Tool	Activates the High Speed Data Communication Module configuration tool.	-
Start Logging Configuration Tool	Activates the QnUDVCPU & LCPU logging configuration tool.	-

*1 : This item is not displayed in the Chinese version of GX LogViewer Version 1.

(8) Window

Item	Description	Reference
Frequently-used Window Configuration	-	Page 177, Section 12.2
Add To Frequently-used Window Configuration	Names the configuration of the window being displayed and adds as 'frequently-used window configuration' on the menu.	
(List of Often-Used Window Sets)	Displays a list of 'frequently-used window configuration' and recovers the selected "frequently-used window configuration".	
Recent Windows	-	Page 181, Section 12.3
Historical Trend	Opens a historical trend window used recently.	
Realtime Trend	Opens a realtime trend window used recently.	
Historical Event	Opens a historical event window used recently.	
Realtime Event	Opens a realtime event window used recently.	Page 54, Section 6.2
Tile Vertically	Tiles a trend window and event window vertically in the main window.	
Tile Horizontally	Tiles a trend window and event window horizontally in the main window.	
Cascade	Cascades trend windows and event windows in the main window.	-
Close All Windows	Closes all windows.	
(Name of child window)	Activates the selected window.	

(9) Help

Item	Description	Reference
Open Manual	Displays GX LogViewer Version 1 Operating Manual.	Page 214, Section 15.1
About GX LogViewer	Displays version information of GX LogViewer.	Page 214, Section 15.2

6.4 Toolbars and Shortcut Keys

This section explains the toolbar configuration of GX LogViewer and the corresponding shortcut keys and menus.

(1) "Standard" toolbar

Toolbar icon	Corresponding menu
	[File] ⇒ [Open]
	[File] ⇒ [Save As] ⇒ [Save CSV File]
	[File] ⇒ [Save As] ⇒ [Save Image File]
	[File] ⇒ [Print]

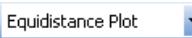
(2) "Online" toolbar

Toolbar icon	Corresponding menu
	[Online] ⇒ [Open Logging File]
	[Online] ⇒ [Realtime Monitor]
	[Online] ⇒ [Save Logging File to PC]
	[Online] ⇒ [Begin Monitor]
	[Online] ⇒ [End Monitor]
	[Online] ⇒ [Pause Monitor]
	[Online] ⇒ [Restart Monitor]
	[Online] ⇒ [Clear Graph]

(3) "Graph Operation" toolbar

Toolbar icon	Corresponding menu	Mouse scroll wheel operation
	[Graph Operation] ⇒ [Graph Alignment]	-
	[Graph Operation] ⇒ [Graph Superimpose]	-
	[Graph Operation] ⇒ [Jump Cursor]	-
	[Graph Operation] ⇒ [Auto Adjust Upper/Lower Bound] ⇒ [For Period on Display]	-
	[Graph Operation] ⇒ [Auto Adjust Upper/Lower Bound] ⇒ [For All Period]	-
	[Graph Operation] ⇒ [Adjust Scale] ⇒ [Widen Graph]	 + Scroll up
	[Graph Operation] ⇒ [Adjust Scale] ⇒ [Narrow Graph]	 + Scroll down
	[Graph Operation] ⇒ [Adjust Graph Location] ⇒ [Move Up Graph]	 +  + Scroll up
	[Graph Operation] ⇒ [Adjust Graph Location] ⇒ [Move Down Graph]	 +  + Scroll down
	[Graph Operation] ⇒ [Adjust Graph Location] ⇒ [Move Graph to Left]	-
	[Graph Operation] ⇒ [Adjust Graph Location] ⇒ [Move Graph to Right]	-
	[Graph Operation] ⇒ [Adjust Graph Location] ⇒ [Horizontal Moving Quantity]	-
	[Graph Operation] ⇒ [Adjust Time Scale] ⇒ [Expansion Time Scale]	 + Scroll up
	[Graph Operation] ⇒ [Adjust Time Scale] ⇒ [Reduction Time Scale]	 + Scroll down
	[Graph Operation] ⇒ [Show Previous Graph]	-
	[Graph Operation] ⇒ [Show Next Graph]	-

(4) "Graph View" toolbar

Toolbar icon	Corresponding menu
	[Graph View] ⇒ [Multiple Cursor]
	[Graph View] ⇒ [Graph Legends]
	[Graph View] ⇒ [Show All Graphs]
	[Graph View] ⇒ [Hide All Graphs]
	[Graph View] ⇒ [Cursor Label]
	[Graph View] ⇒ [Plot Format] ⇒ [Equidistance Plot]/[Time Interval Plot]

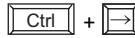
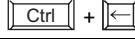
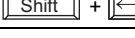
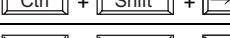
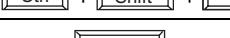
(5) "Event" toolbar

Toolbar icon	Corresponding menu
	[Event] ⇒ [Filter]

(6) "Window" toolbar

Toolbar icon	Corresponding menu
	[Window] ⇒ [Tile Vertically]
	[Window] ⇒ [Tile Horizontally]
	[Window] ⇒ [Cascade]

(7) Other shortcut keys

Shortcut key	Corresponding menu
	Moves the red cursor one plot to the right.
	Moves the red cursor one plot to the left.
	Moves the blue cursor one plot to the right.
	Moves the blue cursor one plot to the left.
	Moves the red cursor and the blue cursor one plot to the right.
	Moves the red cursor and the blue cursor one plot to the left.
	Moves the scroll bar in the graph area to the left.
	Moves the scroll bar in the graph area to the right.
	Moves the scroll bar in the graph area to the left edge.
	Moves the scroll bar in the graph area to the right edge.
	Select one data above in the graph legend area.
	Select one data below in the graph legend area.
	Displays a text box to specify the upper/lower limit display value of the selected trend graph.
	Exits GX LogViewer.

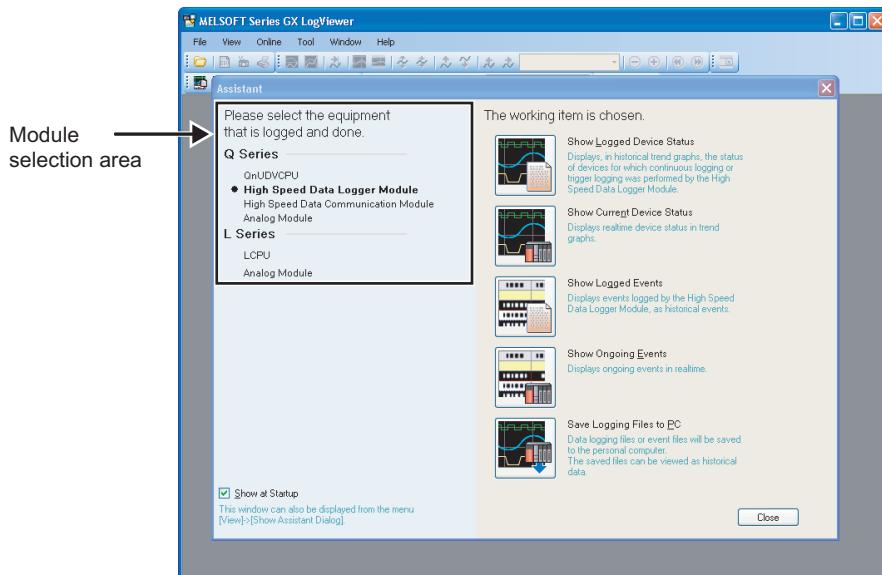
CHAPTER 7 ASSISTANT FUNCTION

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

7.1 Overview

The assistant function is a function to guide a user who is not familiar with the operations of GX LogViewer. Applicable functions for a specific module are displayed. Click a button that corresponds to the purpose and execute the function.

Screen display



Display contents

Item	Description	Reference
Module selection area	-	-
Q Series		Page 65, Section 7.2.1
QnUDVCPU	A guide to operations of functions for data sampled by a QnUDVCPU.	Page 65, Section 7.2.1 (1)
High Speed Data Logger Module	A guide to operations of functions for data sampled by a High Speed Data Logger Module.	Page 66, Section 7.2.1 (2)
High Speed Data Communication Module	A guide to operations of functions for data sampled by a High Speed Data Communication Module.	Page 67, Section 7.2.1 (3)
Analog Module	A guide to operations of functions for data sampled by a Q Series Analog Module.	Page 68, Section 7.2.1 (4)
L Series		Page 69, Section 7.2.2
LCPU	A guide to operations of functions for data sampled by an LCPU.	Page 69, Section 7.2.2 (1)
Analog Module	A guide to operations of functions for data sampled by an L Series Analog Module.	Page 70, Section 7.2.2 (2)
Show at Startup	Switches the display/hide of the <u>Assistant</u> screen when GX LogViewer is activated.	-

7.2 Screen Configuration

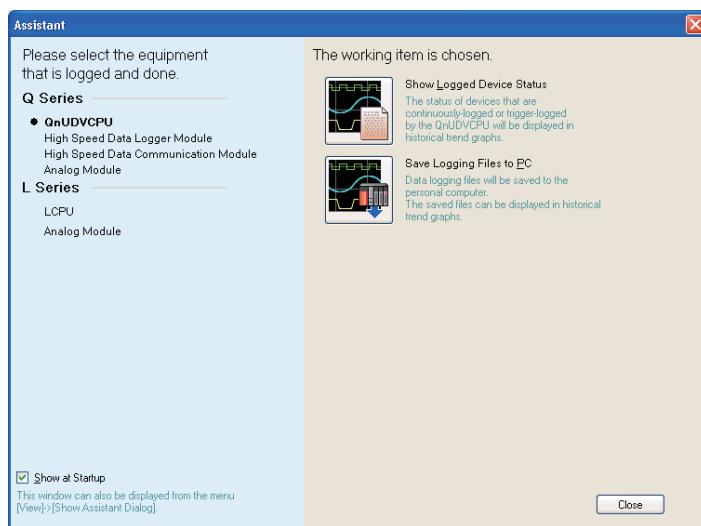
The Assistant screen is set to be displayed automatically when GX LogViewer is activated.

To redisplay the Assistant screen that is closed,  select [View] ⇒ [Show Assistant Dialog].

7.2.1 Q Series

(1) QnUDVCPU

Screen display

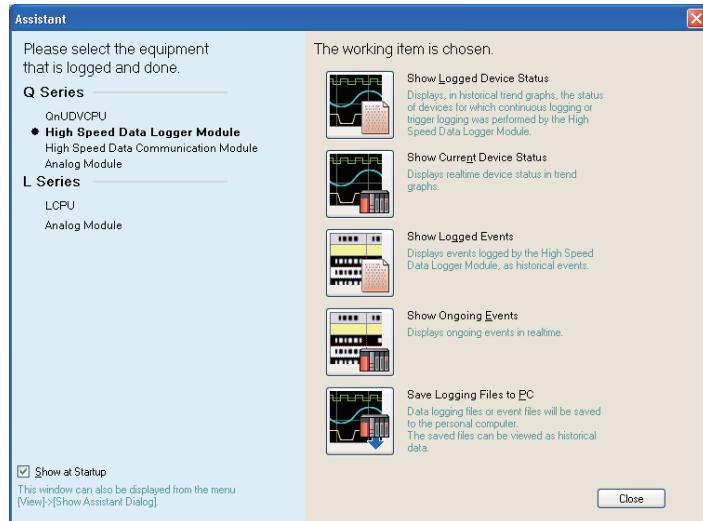


Display contents

Name	Description	Reference
	A guide to display the device status, on which a logging was performed by a QnUDVCPU, as historical trend graphs.	Page 97, Section 9.3.1 (1)
	A guide to operations of saving a data logging file on an SD memory card (root directory) which is installed on a QnUDVCPU to a personal computer.	Page 174, CHAPTER 11

(2) High Speed Data Logger Module

Screen display

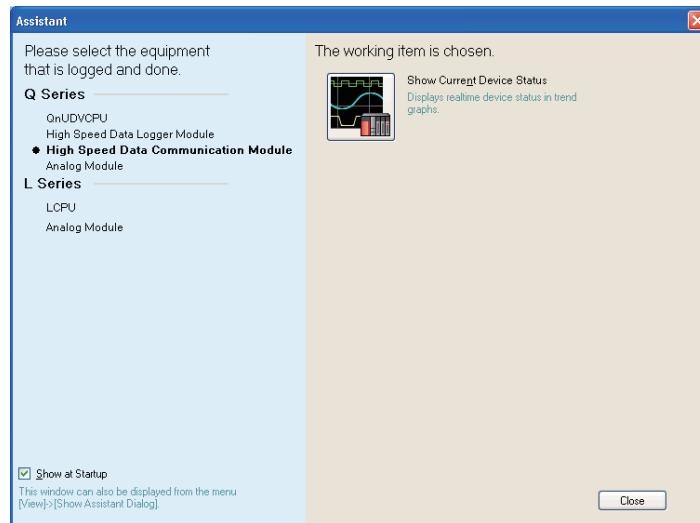


Display contents

Name	Description	Reference
	A guide to display the device status, on which a consecutive logging or trigger logging was performed by a High Speed Data Logger Module, as historical trend graphs.	Page 98, Section 9.3.1 (2)
	A guide to display the current device status sampled by a High Speed Data Logger Module as realtime trend graphs.	Page 101, Section 9.3.2
	A guide to display events logged by a High Speed Data Logger Module as historical events.	Page 159, Section 10.3.1 (1)
	A guide to display events monitored by a High Speed Data Logger Module as realtime events.	Page 161, Section 10.3.2
	A guide to save data logging files and event logging files in a High Speed Data Logger Module to a personal computer.	Page 174, CHAPTER 11

(3) High Speed Data Communication Module

Screen display



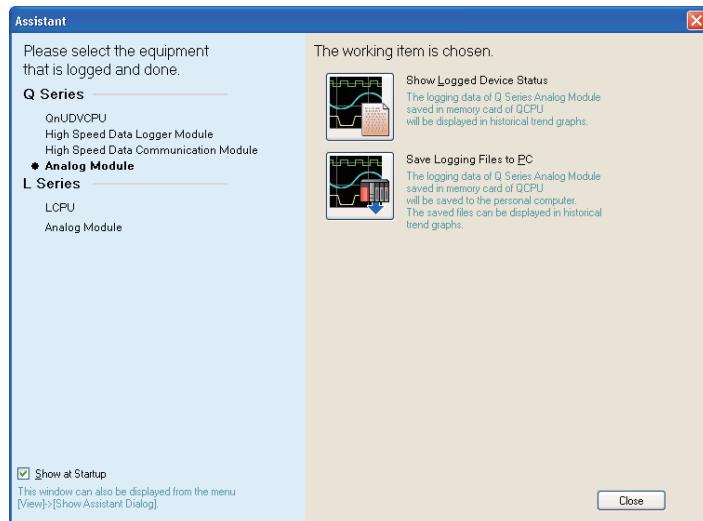
7

Display contents

Name	Description	Reference
	Show Current Device Status A guide to display the current device status sampled by a High Speed Data Communication Module as realtime trend graphs.	Page 102, Section 9.3.2 (2)

(4) Analog Module

Screen display



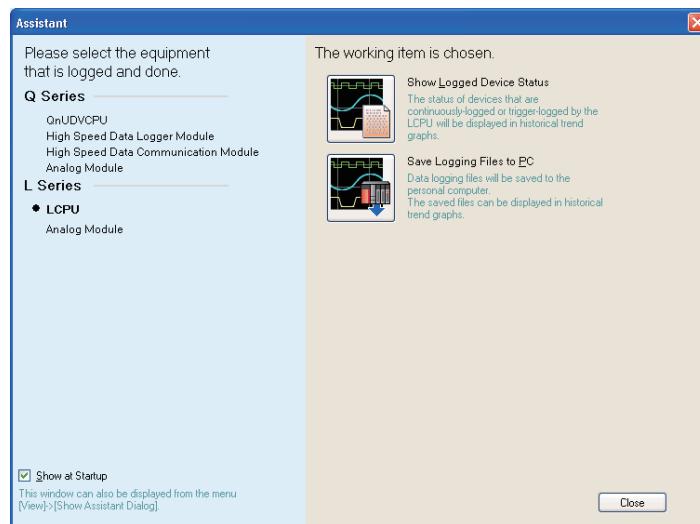
Display contents

Name	Description	Reference
	Show Logged Device Status A guide to display the device status, on which a logging was performed by a Q Series Analog Module, as historical trend graphs.	Page 99, Section 9.3.1 (3)
	Save Logging Files to PC A guide to operations of saving a data logging file on an ATA card (root directory)/SD memory card (LOGGING folder) which is installed on a QCPU to a personal computer.	Page 174, CHAPTER 11

7.2.2 L Series

(1) LCPU

Screen display



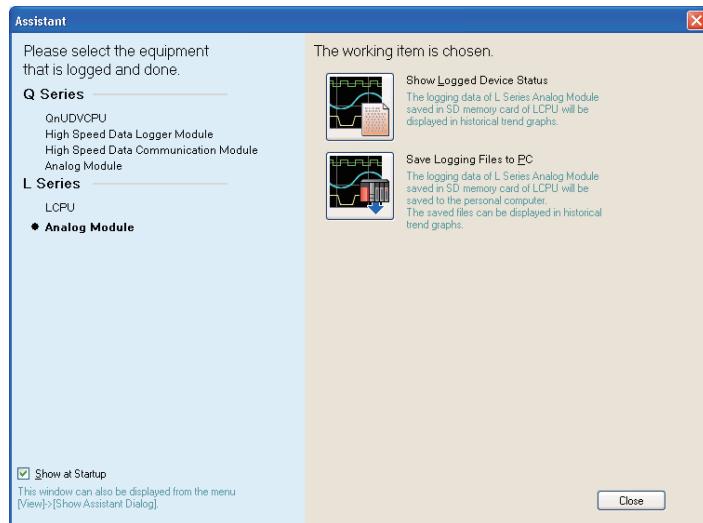
7

Display contents

Name	Description	Reference
	A guide to display the device status, on which a consecutive logging or trigger logging was performed by an LCPU, as historical trend graphs.	Page 97, Section 9.3.1 (1)
	A guide to operations of saving a data logging file on an SD memory card (LOGGING folder) which is installed on an LCPU to a personal computer.	Page 174, CHAPTER 11

(2) Analog Module

Screen display



Display contents

Name	Description	Reference
 Show Logged Device Status	A guide to display the device status, on which a logging was performed by an L Series Analog Module, as historical trend graphs.	Page 99, Section 9.3.1 (3)
 Save Logging Files to PC	A guide to operations of saving a data logging file on an SD memory card (root directory) which is installed on an LCPU to a personal computer.	Page 174, CHAPTER 11

CHAPTER 8 CONNECTING TO MODULE

In order to display or obtain logging data in the module, the type of module needs to be selected for communication. This chapter explains the method for connecting a module.

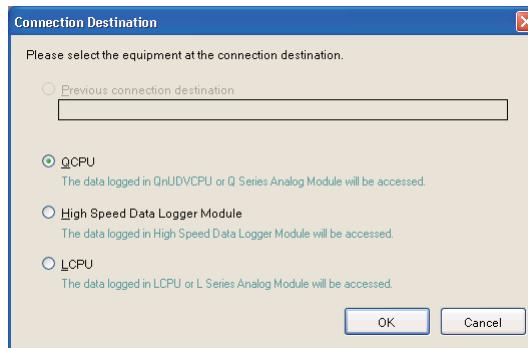
8.1 Selecting Connection Destination



Select the connecting target (QCPU, High Speed Data Logger Module, or LCPU) on the [Connection Destination](#) screen.

Screen display

- **[Online]** ⇒ **[Open Logging File]** ()
- **[Online]** ⇒ **[Save Logging File to PC]** ()



Operating procedure

1. Select the equipment to be connected.

Item	Description	Reference
The previously connected equipment	Select this to connect to the previously connected equipment.	-
QCPU	When using the logging function of QnUDVCPU or Q Series Analog Module, select this to connect to a QCPU.	Page 72, Section 8.2
High Speed Data Logger Module	Select this to connect to a High Speed Data Logger Module.	Page 79, Section 8.3
LCPU	When using the logging function of LCPU or L Series Analog Module, select this to connect to an LCPU.	Page 72, Section 8.2

2. Click the button.

→ The screen to set the connection destination of the selected module is displayed.

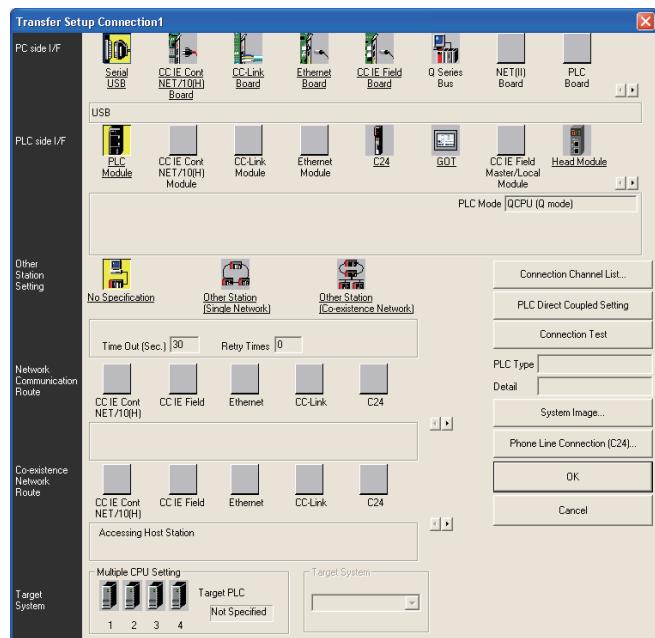
8.2 Connecting to QCPU/LCPU



When "QCPU" or "LCPU" is selected on the Connection Destination screen, the Transfer Setup screen is displayed. Specify a connection destination to the memory card installed on a QCPU/LCPU where the logging file is saved on the Connection Destination screen.

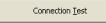
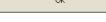
8.2.1 Transfer setup screen

Screen display



Display contents

Item	Description	Reference
PC side I/F	Set the interface of the personal computer.	-
PLC side I/F	Set the interface of the LCPU connected to the personal computer.	-
Other Station Setting	-	-
No Specification	Specify this to access the LCPU directly connected to the personal computer	-
Other Station [Single Network]	Specify this to access the LCPU on another station via only one kind of network (including a multi-tier system) such as CC-Link only, C24 module only or Ethernet only.	-
Other Station [Co-existence Network]	Specify this to access the LCPU on another station via CC-Link or serial communication from the Q series programmable controller connected to the personal computer.	-
Network Communication Route	Select the network type, network number, station number, and start I/O number of the network that is routed for accessing the LCPU on another station. The setting items depend on the selected network type.	-

Item	Description	Reference
 button	Connection destinations can be set by checking network routes on the <u>Connection Channel List</u> screen. Since the route selected in the <u>Connection Channel List</u> screen is set automatically on the <u>Transfer Setup</u> screen, the setting is easy even for a complex system.	Page 78, Section 8.2.5
 button	Set the connection destination to connect a programmable controller CPU and a personal computer directly.	Page 74, Section 8.2.2
 button	Tests if the target LCPU set on the <u>Transfer Setup</u> screen can be accessed normally. If accessed normally, the model type of the target LCPU module is displayed in the "PLC Type" field, one of the detailed setting display fields.	Page 78, Section 8.2.4
 button	Displays a set connection channel in an illustration.	-
 button	Confirms the connection settings and closes the screen.	-
 button	Cancels the connection settings and closes the screen.	-

On the setting screen, the items with underline can be set. Double-click the item for a detailed setting.
The items with yellow icon indicate that the items are already set.

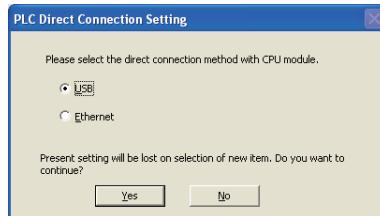
Operating procedure

- **The following are the two connection methods for QCPU/LCPU. Perform the operation by following the instruction described on the reference page.**
 - Connecting directly using a USB/Ethernet cable (☞ Page 74, Section 8.2.2)
 - Connecting via network (☞ Page 75, Section 8.2.3)

8.2.2 Connecting directly using a USB/Ethernet cable

Screen display

- Click the  button on the Transfer Setup screen (☞ Page 72, Section 8.2.1).

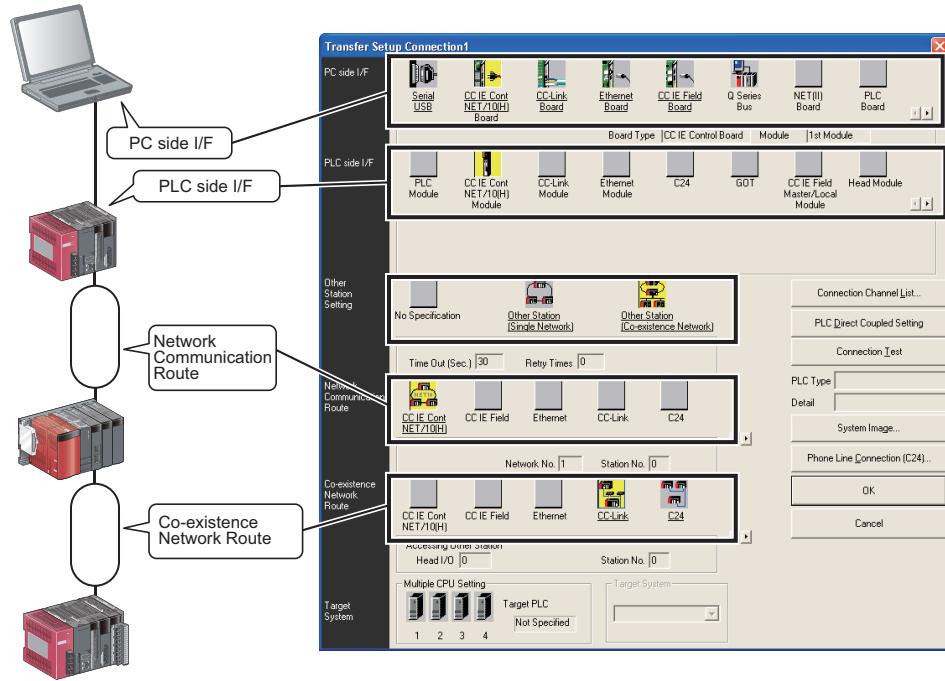


Operating procedure

1. Select "USB" or "Ethernet" on the PLC Direct Connection Setting screen and click the  button.
2. Click the  button on the Transfer Setup screen (☞ Page 72, Section 8.2.1).

8.2.3 Connecting via network

The Transfer Setup screen is used to set the connection. (☞ Page 72, Section 8.2.1)



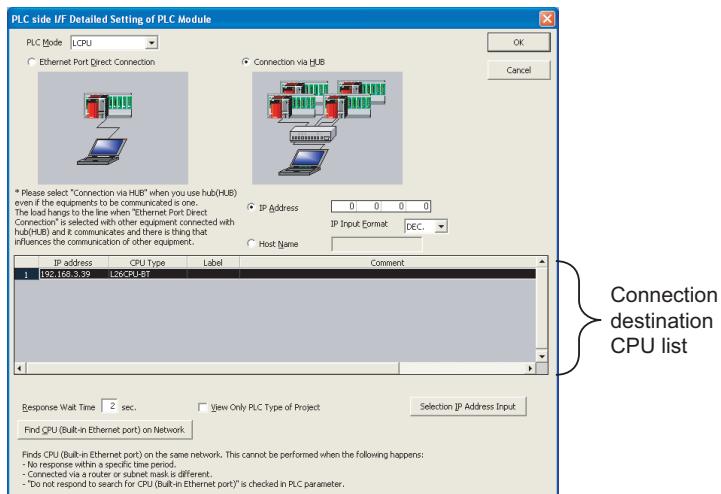
Operating procedure

1. In "PC side I/F", specify the connection interface of the personal computer to which GX LogViewer is installed.
2. In "PLC side I/F", specify the connection interface of the programmable controller CPU. When connecting to a Built-in Ethernet port CPU, the programmable controller CPU can be searched on the network and specified.
☞ Page 76, (1) in this section Search and specify Built-in Ethernet port CPU module on network
3. In "Other Station Setting", specify the existence of other stations.
4. In "Network Communication Route", select the network type, network number, station number, and start I/O number of the network that is routed for accessing the programmable controller CPU on another station. The setting items depend on the selected network type.
5. Click the button.

(1) Search and specify Built-in Ethernet port CPU module on network

Screen display

1. Select "Ethernet Board" in "PC side I/F" on the Transfer Setup screen.
2. Double-click "PLC Module" in "PLC side I/F".



Operating procedure

1. Select the CPU mode (LCPU or QCPU (Q mode)) to connect with a personal computer in "PLC Mode".
2. Select "Connection via hub".

Item	Description
Ethernet Port Direct Connection	Select this to connect directly to the Ethernet port of programmable controller CPU using a USB cable.
Connection via HUB	Select this to connect to the programmable controller CPU by specifying the IP address.
IP Address	Specify the IP address of the programmable controller CPU.
Host Name	Specify the host name of the programmable controller CPU.

3. Click the **Find CPU (Built-in Ethernet port) on Network** button.

→ The information of the Built-in Ethernet port CPU on the network is displayed on the connection destination CPU list.

Item	Description
Connection destination CPU list	Displays IP address, CPU type, Label, and Comment of the detected programmable controller CPU.
Response Wait Time	Displays a response wait time when searching for programmable controller CPUs. (1 to 99 seconds).

4. Select a target CPU module from the connection destination programmable controller CPU list, and click the **Selection IP Address Input** button.
→ The IP address of the selected programmable controller CPU in the connection destination CPU list is reflected to "IP Address".
5. Click the **OK** button.
→ The information of the specified programmable controller CPU is reflected to the Transfer Setup screen.

Point

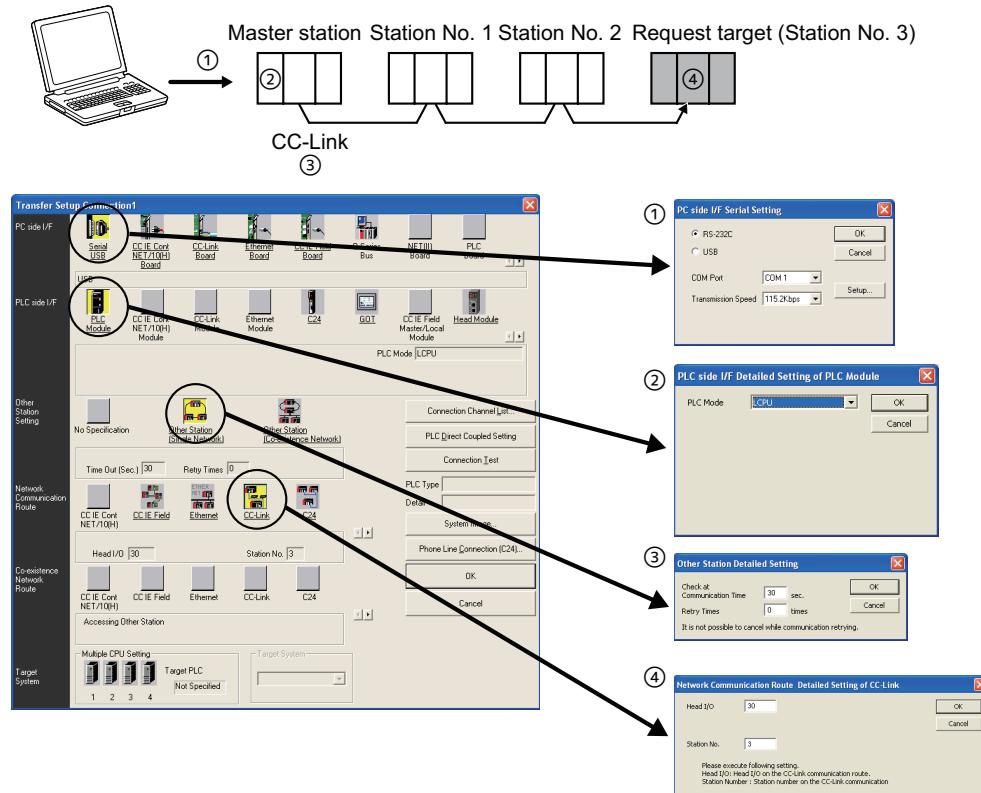
For Windows Vista®, Windows® 7, and Windows® 8, the following message may be displayed when the

 button is clicked. Click the  button for Windows Vista®, and click the  button for Windows® 7 to disable the blockage and continue the operation. (The following screen image is from Windows Vista®.)



(2) Setting example (for CC-Link system)

The following is the example of connection destination setting under the following system configuration.



Point

- Accessible station numbers when accessing the programmable controller CPU on another station via CC-Link
When the programmable controller CPU is connected directly or via a serial communication module, accessible station numbers when accessing the programmable controller CPU on another station via CC-Link are 0 (master) to 63.

8.2.4 Communication test

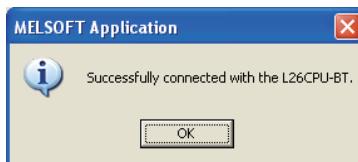
This function tests if the connection route set on the Transfer Setup screen can be accessed normally.

Operating procedure

Set the route on the Transfer setup screen, and click the  button.

→ The following message is displayed when the connection is normal.

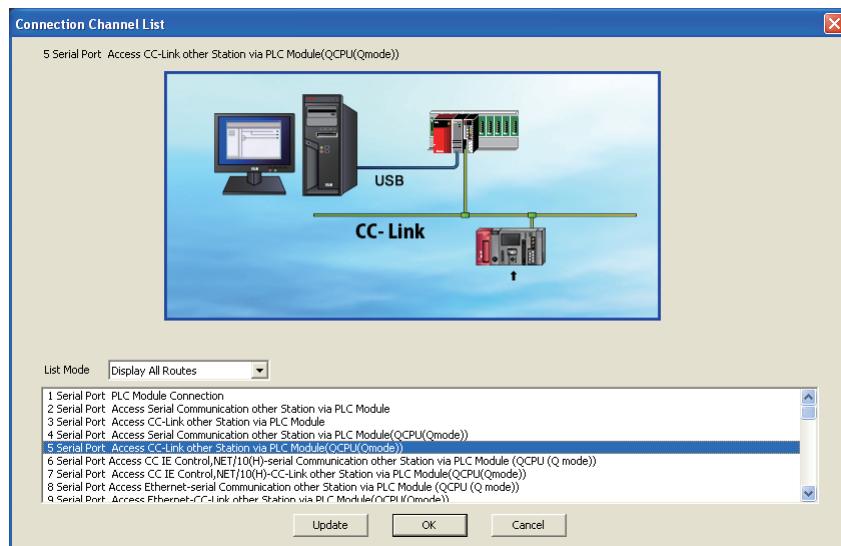
Ex:When connecting to an L26CPU-BT



8.2.5 Connection Channel List

A routes can be selected from the list while checking the route visually on the Connection Channel List screen. The route selected on the Connection Channel List screen is set to the Transfer setup screen. Set the network number, station number, and other settings depending on the access target.

Setting screen



List mode	Description
Display All Routes	Displays all routes supported in GX LogViewer.
Display Selected Routes	Displays only accessible routes for "Other Station Setting" and "Network Communication Route" setting. Specify the interfaces for "PC side I/F" and "PLC side I/F" on the <u>Transfer Setup</u> screen and select "Display Selected Routes" to display the routes.
 button	Applies the route selected from the connection channel list to the <u>Transfer setup</u> screen.
 button	Applies the route selected from the connection channel list to the <u>Transfer setup</u> screen, and closes the screen.
 button	Without applying the route selected from the connection channel list to the <u>Transfer setup</u> screen, closes the screen.

8.3 Connecting to High Speed Data Logger Module

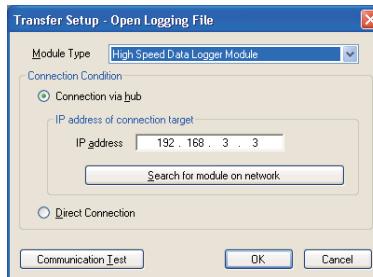


When "High Speed Data Logger Module" is selected on the Connection Destination screen, the Transfer Setup screen is displayed.

The connection method needs to be specified on the Transfer Setup screen when connecting to a High Speed Data Logger Module.

8.3.1 Transfer setup screen

Screen display



Display contents

Item	Description	Reference
Module Type	"High-speed data logger module" is displayed.	-
Connection Condition	Select the connection condition of a High Speed Data Logger Module.	-
Connection via hub	Select this to connect a High Speed Data Logger Module by specifying the IP address.	Page 80, Section 8.3.2
IP address	Specify the IP address of the High Speed Data Logger Module.	
Search for module on network button	Opens the <u>Find High Speed Data Logger Module</u> screen for searching High Speed Data Logger Modules on the network.	Page 81, Section 8.3.2 (2)
Direct Connection	Connects a directly-connected High Speed Data Logger Module without specifying the IP address.	Page 82, Section 8.3.3
Communication Test button	Checks the communication with the High Speed Data Logger Module specified as a connection destination.	Page 82, Section 8.3.4
OK button	Applies the settings and closes the screen.	-

Operating procedure

- The following are the two connection methods for High Speed Data Logger Module.**
 - Connecting via hub with specifying IP address ([Page 80, Section 8.3.2](#))
 - Connecting directly using a crossing cable without specifying IP address ([Page 82, Section 8.3.3](#))

8.3.2 Connecting via hub with specifying IP address

When connecting via hub, specify the High Speed Data Logger Module to be connected by either following method.

- Directly entering the IP address of the High Speed Data Logger Module to be connected
- Searching for High Speed Data Logger Modules on the network

(1) Directly entering the IP address of the High Speed Data Logger Module to be connected

Operating procedure

1. Select "Connection via hub" on the Transfer Setup screen. (☞ Page 79, Section 8.3.1)
2. Enter the IP address of the High Speed Data Logger Module to be connected to "IP address".
3. Click the  button.

Remark

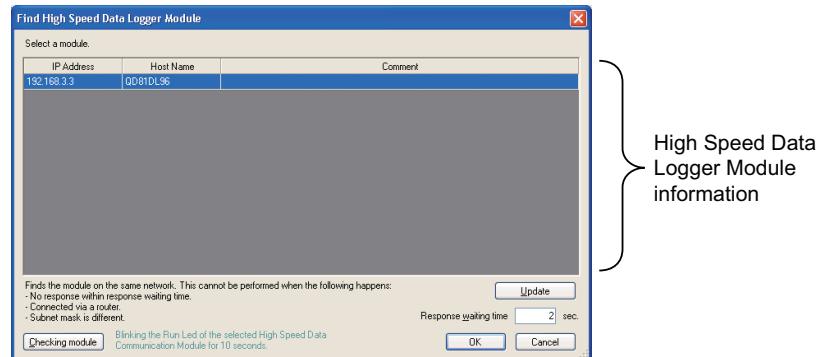
When the guest account is used to login the operating system of a personal computer, it cannot communicate with a High Speed Data Logger Module.

.....

(2) Searching for High Speed Data Logger Modules on the network

Screen display

- Click the button on the Transfer Setup screen ([Page 79, Section 8.3.1](#)).



Operating procedure

- Select a High Speed Data Logger Module to be connected from the list on the Find High Speed Data Logger Module screen.

Item	Description
High Speed Data Logger Module information	Displays a search result of High Speed Data Logger Modules exist on the network. A maximum of 64 modules are displayed.
IP address ^{*1}	Displays IP address of the detected High Speed Data Logger Module.
Host name ^{*1}	Displays host name (a host name registered in the network setting) of the detected High Speed Data Logger Module.
Comment ^{*1}	Displays logging file comment written to the detected High Speed Data Logger Module.

*1 : Displayed items can be sorted by double-clicking the column title.

- Click the button.
 → The IP address of the selected row is reflected to the Transfer Setup screen.
- Click the button on the Transfer Setup screen.

Display contents

Item	Description
Response waiting time	Displays the response wait time when searching for modules. (1 to 99 seconds)
<input type="button" value="Checking module"/> button	Flashes the "RUN" LED on the front of the module for 10 seconds to check the selected High Speed Data Logger Module.
<input type="button" value="Update"/> button	Searches for High Speed Data Logger Modules again, and updates the list.

8.3.3 Connecting directly using a crossing cable without specifying IP address

Operating procedure

1. Select "Direct Connection" on the Transfer Setup screen ([Page 79, Section 8.3.1](#)).
2. Click the  button.

8.3.4 Communication test

This function tests if the equipment communicates normally with the connection route set on the Transfer Setup screen.

Operating procedure

Select a High Speed Data Logger Module to be connected on the Transfer Setup screen, click the  button.

→ The following message is displayed when the connection is normal.



8.4 Connecting to High Speed Data Communication Module



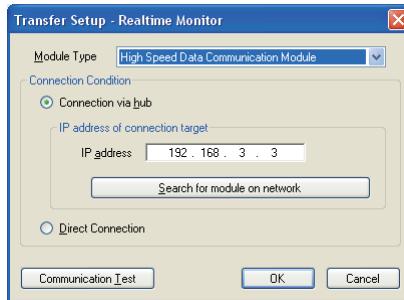
When "High Speed Data Communication Module" is selected on the Connection Destination screen, the Transfer Setup screen is displayed.

The connection method needs to be specified on the Transfer Setup screen when connecting to a High Speed Data Communication Module.

8.4.1 Transfer setup screen

Screen display

-  [Online] ⇒ [Realtime Monitor] ()



Display contents

Item	Description	Reference
Module Type	"High-speed data communication module" is displayed.	-
Connection Condition	Select the connection condition of a High Speed Data Communication Module.	-
Connection via hub	Select this to connect a High Speed Data Communication Module by specifying the IP address.	Page 84, Section 8.4.2
IP address	Specify the IP address of the High Speed Data Communication Module.	
Search for module on network button	Opens the <u>Find High Speed Data Communication Module</u> screen for searching High Speed Data Communication Modules on the network.	Page 85, Section 8.4.2 (2)
Direct Connection	Connects a directly-connected High Speed Data Communication Module without specifying the IP address.	Page 86, Section 8.4.3
Communication Test button	Checks the communication with the High Speed Data Communication Module specified as a connection destination.	Page 86, Section 8.4.4
OK button	Applies the settings and closes the screen.	-

Operating procedure

- **The following are the two connection methods for High Speed Data Communication Module.**
 - Connecting via hub with specifying IP address ( Page 84, Section 8.4.2)
 - Connecting directly using a crossing cable without specifying IP address ( Page 86, Section 8.4.3)

8.4.2 Connecting via hub with specifying IP address

When connecting via hub, specify the High Speed Data Communication Module to be connected by either following method.

- Directly entering the IP address of the High Speed Data Communication Module to be connected
- Searching for High Speed Data Communication Modules on the network

(1) Directly entering the IP address of the High Speed Data Communication Module to be connected

Operating procedure

1. Select "Connection via hub" on the Transfer Setup screen. ( Page 83, Section 8.4.1)
2. Enter the IP address of the High Speed Data Communication Module to be connected to "IP address".
3. Click the  button.

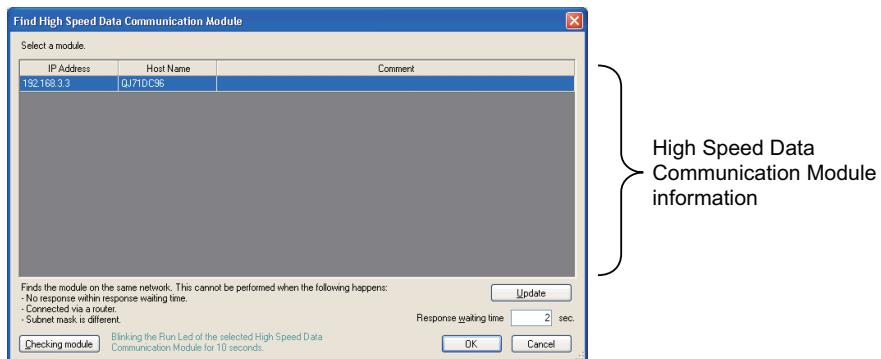
Remark

When the guest account is used to login the operating system of a personal computer, it cannot communicate with a High Speed Data Communication Module.

(2) Searching for High Speed Data Communication Modules on the network

Screen display

- Click the button on the Transfer Setup screen ([Page 83, Section 8.4.1](#)).



Operating procedure

- Select a High Speed Data Communication Module to be connected from the list on the Find High Speed Data Communication Module screen.

Item	Description
High Speed Data Communication Module information	Displays a search result of High Speed Data Communication Modules exist on the network. A maximum of 64 modules are displayed.
IP address ^{*1}	Displays IP address of the detected High Speed Data Communication Module.
Host name ^{*1}	Displays host name (a host name registered in the network setting) of the detected High Speed Data Communication Module.
Comment ^{*1}	Displays the comment written to the detected High Speed Data Communication Module.

*1 : Displayed items can be sorted by double-clicking the column title.

- Click the button.
 → The IP address of the selected row is reflected to the Transfer Setup screen.
- Click the button on the Transfer Setup screen.

Display contents

Item	Description
Response waiting time	Displays the response wait time when searching for modules. (1 to 99 seconds)
<input type="button" value="Checking module"/> button	Flashes the "RUN" LED on the front of the module for 10 seconds to check the selected High Speed Data Communication Module.
<input type="button" value="Update"/> button	Searches for High Speed Data Communication Modules again, and updates the list.

8.4.3 Connecting directly using a crossing cable without specifying IP address

Operating procedure

1. Select "Direct Connection" on the Transfer Setup screen ([Page 83, Section 8.4.1](#)).
2. Click the  button.

8.4.4 Communication test

This function tests if the equipment communicates normally with the connection route set on the Transfer Setup screen.

Operating procedure

Select a High Speed Data Communication Module to be connected on the Transfer Setup screen,

click the  button.

→ The following message is displayed when the connection is normal.



CHAPTER 9 USING TREND GRAPH FUNCTION

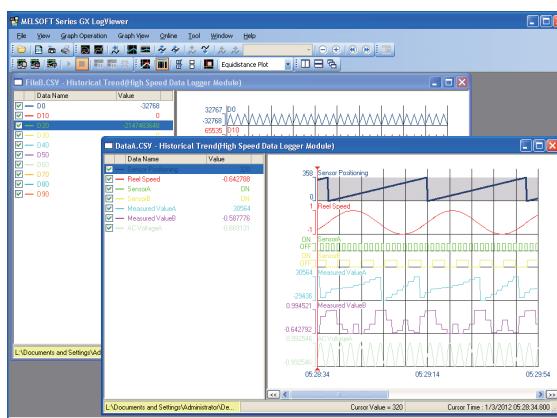
9.1 Overview

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

This function displays data in graph format sampled by the logging function of a module or sampling trace of GX Works2.

The following two types of display method are available for trend graphs.

- Historical trend
- Realtime trend (For High Speed Data Logger Module/High Speed Data Communication Module)

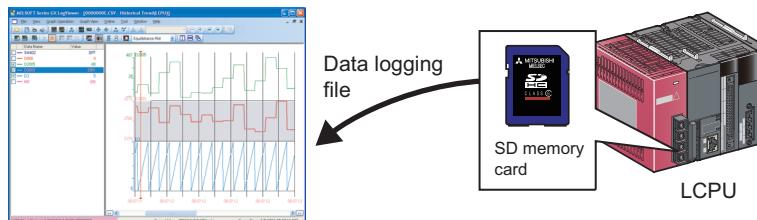


(1) Historical trend

Data logging files stored in the memory card on the module, data logging file in a personal computer, or sampling trace data are displayed.

Stored past data can be confirmed anytime.

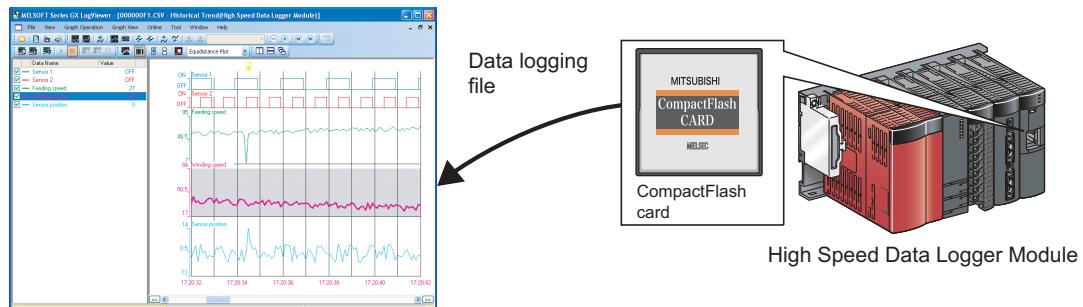
(a) Displaying data sampled by the logging function of QnUDVCPU/LCPU



For the operation method, refer to the following section.

☞ Page 97, Section 9.3.1 (1) Displaying logging files saved with the logging function of QnUDVCPU/LCPU

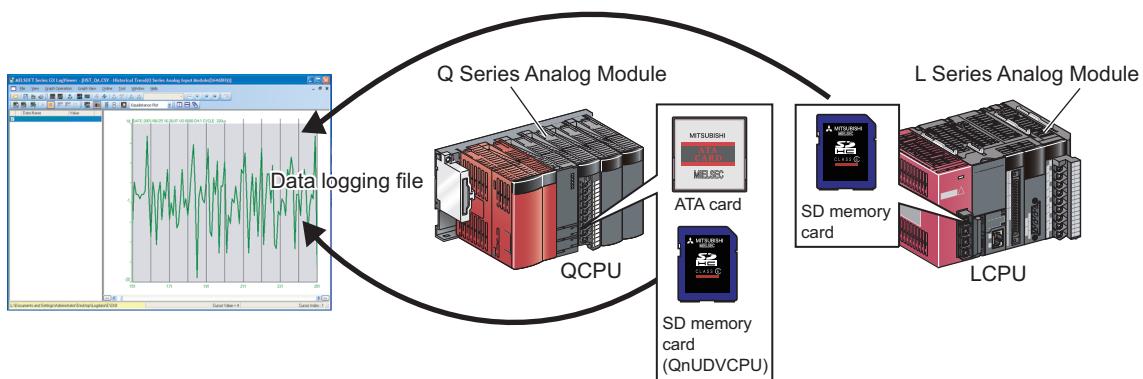
(b) Displaying data sampled by High Speed Data Logger Module



For the operation method, refer to the following section.

☞ Page 98, Section 9.3.1 (2) Displaying data logging files saved with the logging function of High Speed Data Logger Module

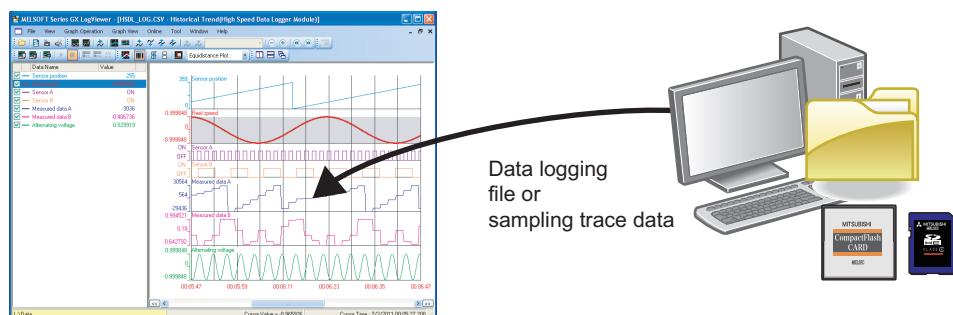
(c) Displaying data sampled by the logging function of Q/L Series Analog Module



For the operation method, refer to the following section.

☞ Page 99, Section 9.3.1 (3) Displaying logging files saved with the logging function of Q/L Series Analog Module

(d) Displaying data stored in a personal computer, or in a memory medium connected to a personal computer



For the operation method, refer to the following section.

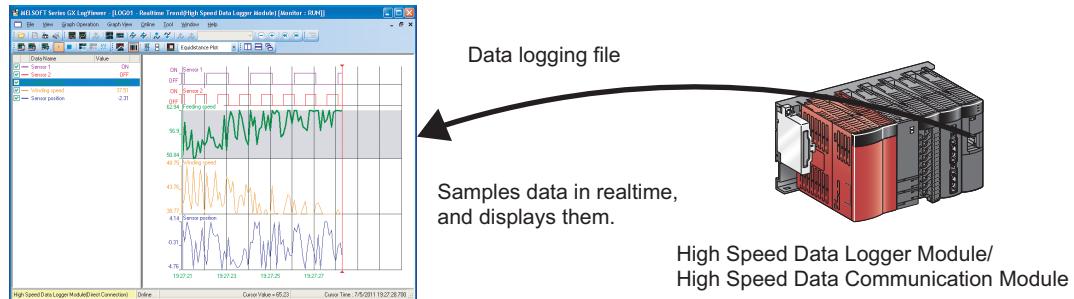
☞ Page 100, Section 9.3.1 (4) Displaying data logging files or sampling trace data stored in a personal computer or in a memory medium connected to a personal computer

(2) Realtime trend (For High Speed Data Logger Module/High Speed Data Communication Module)

The most recent data sampled by the High Speed Data Logger Module/the High Speed Data Communication Module are displayed.

They are always kept updated so that the event history from the start of monitoring to current time can be confirmed.

To display Realtime trend, a personal computer and a High Speed Data Logger Module/a High Speed Data Communication Module need to be connected to each other online.



For details of realtime trend display operation, refer to the following section.

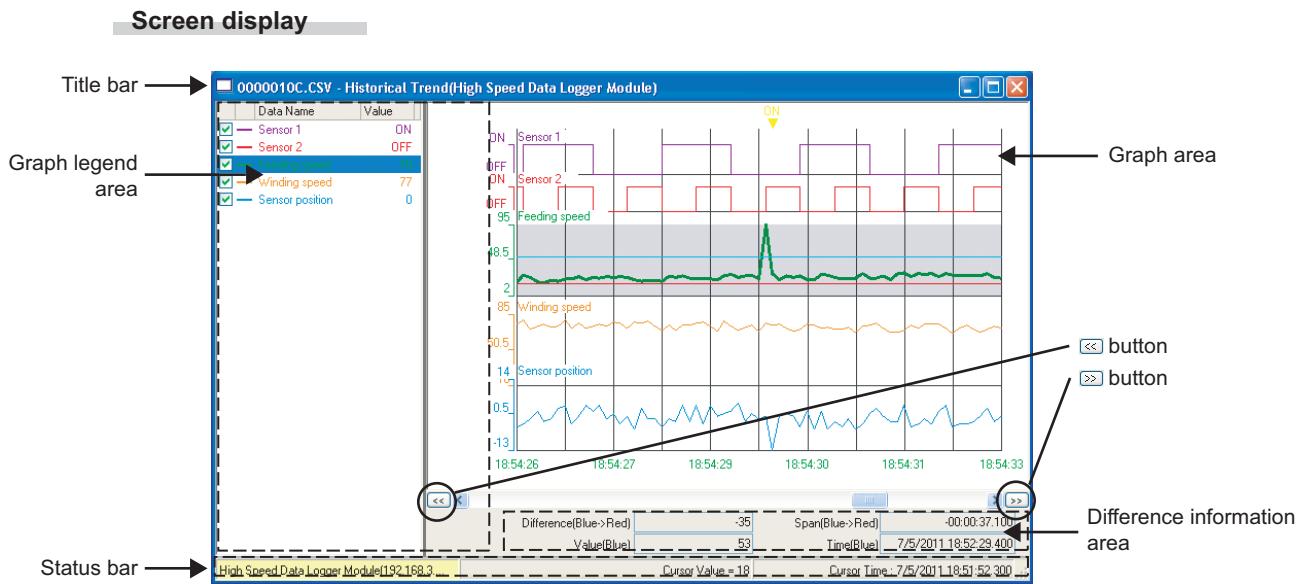
☞ Page 101, Section 9.3.2 Displaying current devices (Realtime trend)

9.2 Screen Configuration

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

This section explains the screen configuration of trend window.

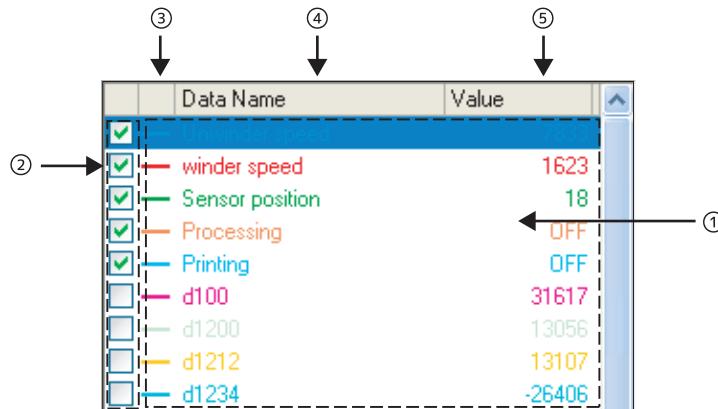
9.2.1 Trend window



Item	Description	Reference
Title bar	Displays the following data. <ul style="list-style-type: none">For Historical trend Logging file names - historical trend (module name) When displaying sampling trace data, "Sampling trace file name - Historical trend (Sampling trace)" is displayed.For Realtime trend Logging setting name - realtime trend (module name) [monitoring status]	-
Graph legend area	Displays a list of data names and their values/status that can be displayed as graphs. (Maximum of 32 legends)	Page 91, Section 9.2.2
Graph area	Displays trend graphs. Displays data selected in the graph legend area.	Page 92, Section 9.2.3
<< button	Displays the previous graph. This operation is the same as the operation of selecting [Graph Operation] ⇒ [Show Previous Graph] ().	Page 130, Section 9.5.9 (1)
>> button	Displays the next graph. This operation is the same as the operation of selecting [Graph Operation] ⇒ [Show Next Graph] ().	Page 132, Section 9.5.9 (2)
Difference information area	Displays difference information between two cursors when the multiple cursor function is activated.	Page 93, Section 9.2.4
Status bar	Displays basic status of the selected data.	Page 95, Section 9.2.5

9.2.2 Graph legend area

Screen display



Item	Description	Reference
① Display area	Displays a list of data names and their values/status. The background color and the text color can be changed. When the text color is changed, the color of the graph displayed in the graph drawing area is also changed.	-
② Display selection	Select to display a graph.	Page 111, Section 9.5.1
③ Type of graph line	Indicates the type of graph line displayed in the graph area. The type of line can be changed.	-
④ Data Name	Displays data name. Data can be added to/deleted from the list.	Page 108, Section 9.4.2
⑤ Value	Displays data value/status at the cursor displayed as a standard (vertical red cursor line).	-

Graph legend area in a trend window can be displayed/hidden by any of the following operations.

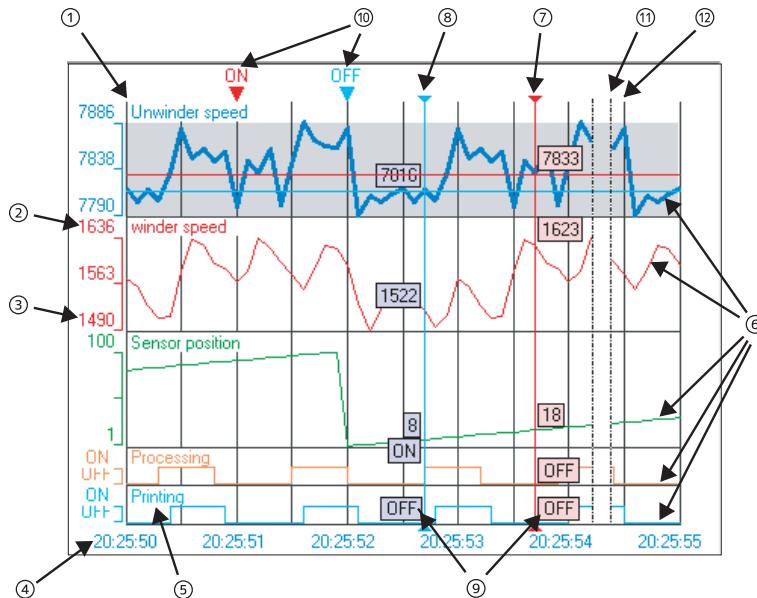


Operating procedure

- [Graph View] ⇒ [Graph Legends] ()
- Right-click on the graph legend area, and select [Graph Legends].
- Right-click on the graph area, and select [Graph Legends].

9.2.3 Graph area

Screen display



Item	Description	Reference
① Graph drawing area	An area to display trend graphs. The background color can be changed.	Page 138, Section 9.7
② Upper limit display value	A maximum value of display for each graph.	Page 123, Section 9.5.5
③ Lower limit display value	A minimum value of display for each graph.	
④ Time scale label ^{*2} (X axis label)	Labels for the time scale. They are displayed in either following format. • Time ^{*1} /Date ^{*1} /Date and Time ^{*1} /Index Q/L Series Analog Module does not have time information in the logging data, therefore only Index can be displayed.	Page 137, Section 9.6.5
⑤ Data name	Name of data.	-
⑥ Trend graphs	Lines that indicate data transitions. Their colors and types can be changed.	Page 138, Section 9.7
⑦ Red cursor	A cursor that is displayed as a standard. (Displayed at the left edge of the graph area for the first activation.)	Page 106, Section 9.4.1
⑧ Blue cursor	A cursor that is displayed for comparison. It is displayed only when the multiple cursor function is activated. (Displayed at the left edge of the graph area for the first activation.)	
⑨ Cursor label	Values/status at the intersecting points of trend graphs with the cursor.	Page 135, Section 9.6.2
⑩ Trigger mark	A mark to display the point where the trigger condition (ON/OFF) is satisfied. Its color can be changed.	Page 138, Section 9.7.1
⑪ Data missing lines	Lines that are displayed at the point where data could not be sampled.	Page 149, Section 9.11
⑫ Grid line	Lines that divide the graph drawing area in ten. The color of grid can be changed.	Page 138, Section 9.7

*1 : *(asterisk) is displayed when the date information does not exist, or when the date information does not contain 'year, month, day' information.

*2 : The logging files, in which any of 'year', 'month', 'day', 'hour', 'minute', 'second' of the data line output format (which can be set by the configuration tool) is missing, are displayed as the index display only.

Remark

A maximum number of graphs that can be displayed in one trend window is 32.

9.2.4 Difference information area

The following two types of display method are available for difference information area.

Q/L Series Analog Module does not have time information in the logging data, therefore only Index can be displayed.

- Time Display
- Index Display

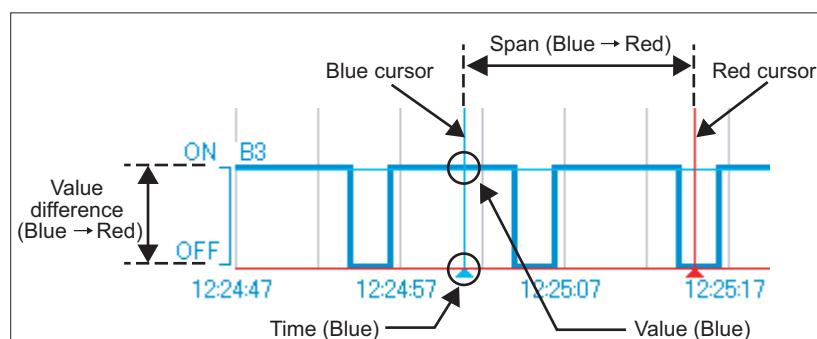
(1) For time display

Screen display

Difference(Blue->Red)	-80	Span(Blue->Red)	-00:01:20.001,300
Value(Blue)	322	Time(Blue)	12/9/2009 21:33:11.481

Item	Description
Difference (Blue → Red)	Displays difference information of value/status. • When a graph is bit data (ON → OFF, OFF → ON, ON → ON, OFF → OFF) • When a graph is word data (Value at the red cursor - Value at the blue cursor)
Span (Blue → Red)	Displays difference information of time. (Time at the red cursor - Time at the blue cursor) Data sampled by QnUDVCPU/LCPU are displayed up to μ s unit, and data sampled by High Speed Data Logger Module are displayed up to ms unit.
Value (Blue)	Displays a value/status at the intersecting point of the trend graph with the blue cursor.
Time (Blue)*1	Displays time at the blue cursor.

*1 : * (asterisk) is displayed when the date information does not exist, or when the date information does not contain 'year, month, day' information.

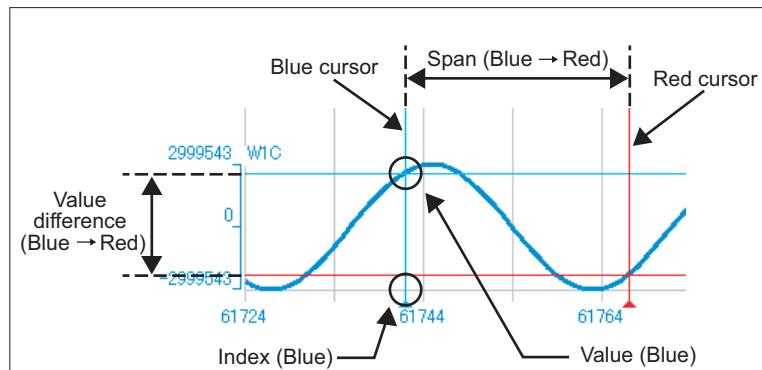


(2) For index display

Screen display

Difference(Blue->Red)	-80	Span(Blue->Red)	-400
Value(Blue)	322	Index(Blue)	12401

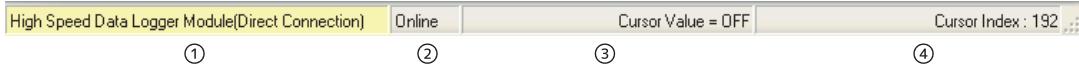
Item	Description
Difference (Blue → Red)	Displays difference information of value/status. • When a graph is bit data (ON → OFF, OFF → ON, ON → ON, OFF → OFF) • When a graph is word data (Value at the red cursor - Value at the blue cursor)
Span (Blue → Red)	Displays difference information of index. (Index at the red cursor - Index at the blue cursor)
Value (Blue)	Displays a value/status at the intersecting point of the trend graph with the blue cursor.
Index (Blue)	Displays index at the blue cursor.



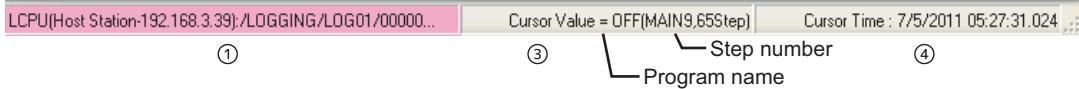
9.2.5 Status bar

Screen display

< Example: When directly connected to High Speed Data Logger Module, and the index display is set for Realtime trend >



< Example: When connected to LCPU using Ethernet, and the time display is set for Historical trend >



Item	Description														
① Acquisition destination and logging file type of data logging file	<p>Displays the acquisition destination and the logging file type of the data logging file being displayed with characters and color.</p> <p>Displayed characters</p> <p>< For Historical trend > Displays the acquisition destination of data logging file being displayed.</p> <ul style="list-style-type: none"> When connecting to a QCPU QCPU (connection channel):/File path When connecting to a High Speed Data Logger Module High Speed Data Logger Module (IP address or direct connection):/File path When the save destination is a memory medium in a personal computer or a memory medium connected to a personal computer File path <p>< For Realtime trend > Displays an IP address of a High Speed Data Logger Module/a High Speed Data Communication Module communicating with, or "Direct Connection".</p>														
② Communication status	Background color														
③ Cursor Value	<table border="1"> <thead> <tr> <th>Logging file type</th><th>Background color</th></tr> </thead> <tbody> <tr> <td>QnUDVCPU</td><td>Pale blue</td></tr> <tr> <td>High Speed Data Logger Module High Speed Data Communication Module Q Series Analog Input Module</td><td>Light yellow</td></tr> <tr> <td>LCPU</td><td>Rose</td></tr> <tr> <td>L Series Analog Module</td><td>Light green</td></tr> <tr> <td>Sampling trace data</td><td>Gold</td></tr> <tr> <td>Energy Measuring Unit</td><td>Lime</td></tr> </tbody> </table>	Logging file type	Background color	QnUDVCPU	Pale blue	High Speed Data Logger Module High Speed Data Communication Module Q Series Analog Input Module	Light yellow	LCPU	Rose	L Series Analog Module	Light green	Sampling trace data	Gold	Energy Measuring Unit	Lime
Logging file type	Background color														
QnUDVCPU	Pale blue														
High Speed Data Logger Module High Speed Data Communication Module Q Series Analog Input Module	Light yellow														
LCPU	Rose														
L Series Analog Module	Light green														
Sampling trace data	Gold														
Energy Measuring Unit	Lime														
④ Cursor Time ² /Index	Displays "Online" or "Offline". (For Realtime trend only)														
Program name ¹	Displays a value/status at the intersecting point of the trend graph with the red cursor.														
Step number ¹	Displays an execution program name of the logging data.														
④ Cursor Time ² /Index	Displays a step number of the logging data.														
④ Cursor Time ² /Index	Displays time or index at the red cursor.														

*1 : These items are displayed only when the data logged by QnUDVCPU/LCPU are displayed.

*2 : *(asterisk) is displayed when the date information does not exist, or when the date information does not contain 'year, month, day' information.

9.3 Displaying Trend Graphs

Data sampled by the LCPU module or High Speed Data Logger Module are displayed as trend graphs.

- Displaying logged devices (Historical trend) (☞ Page 96, Section 9.3.1)
- Displaying current devices (Realtime trend) (☞ Page 101, Section 9.3.2)
- Operating realtime trend monitoring status (☞ Page 104, Section 9.3.3)

9.3.1 Displaying logged devices (Historical trend)

QnUDVCPU **High Speed Data Logger** **High Speed Data Communication** **Q Analog** **LCPU** **L Analog**

With Historical trend, the following files stored in a module or a memory medium are specified, and displayed on the trend graph.

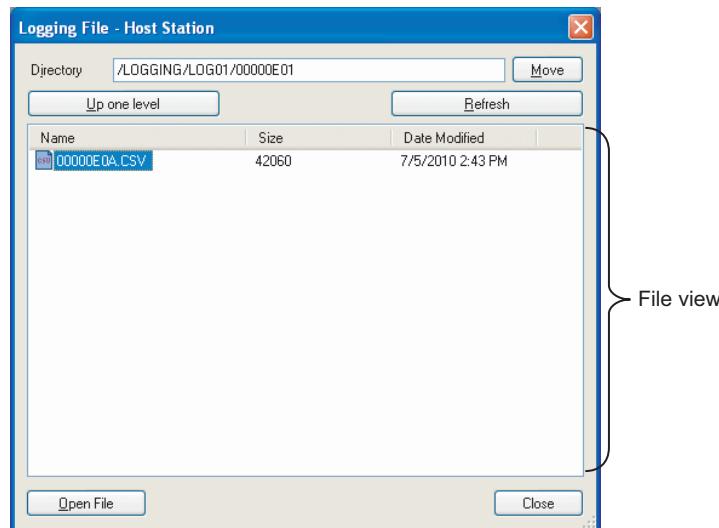
- Logging files stored in an SD memory card with the logging function of QnUDVCPU/LCPU
- Logging files stored in a CompactFlash card with the data logging function of High Speed Data Logger Module
- Logging files stored in an ATA card or an SD memory card with the data logging function of Q/L Series Analog Module
- Data logging files, sampling trace data, or logging data sampled by Energy measuring Unit stored in a personal computer or in a memory medium connected to a personal computer

(1) Displaying logging files saved with the logging function of QnUDVCPU/LCPU

Data logging files stored in an SD memory card installed on QnUDVCPU/LCPU with the logging function of QnUDVCPU/LCPU are displayed with Historical trend.

Screen display

1.  [Online] ⇒ [Open Logging File] ()
2. Select "QCPU" or "LCPU" on the Connection Destination screen.
3. Specify QnUDVCPU/LCPU to be connected with and its route on the Transfer Setup screen.
4. Cancel the access restriction on the Enter remote password screen. (Only when the remote password is set.)



Operating procedure

1. Select a data logging file (***.CSV) in the file view. (Multiple files cannot be selected.)

Item	Description
Directory	Displays a path of the directory being displayed in the file view. Or, specify the directory.
 button	Moves to the specified directory.
 button	Moves up to the directory one layer above.
 button	Updates the contents displayed in the file view.
File view	Displays a list of folders and files in the path specified for "Directory".

2. Click the  button.

→ The selected data logging file is displayed as a trend graph.

Point

For details of remote password, refer to the following manual.

 QnUCPU User's Manual (Function Explanation, Program Fundamentals)

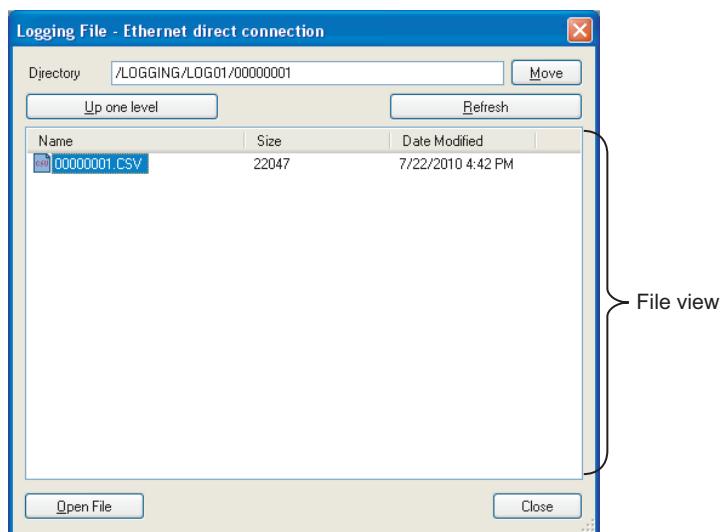
 MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

(2) Displaying data logging files saved with the logging function of High Speed Data Logger Module

Data logging files stored in a CompactFlash card with the data logging function of High Speed Data Logger Module are displayed with Historical trend.

Screen display

1.  [Online] ⇒ [Open Logging File] ()
2. Select "High Speed Data Logger Module" on the Connection Destination screen.
3. Specify a High Speed Data Logger Module to be connected with on the Transfer Setup screen.
4. Cancel the access restriction on the Access Authentication screen. (Only when the access restriction is set.)



Operating procedure

1. Select a data logging file (***.CSV or ***.BIN) in the file view. (Multiple files cannot be selected.)

Item	Description
Directory	Displays a path of the directory being displayed in the file view. Or, specify the directory.
 button	Moves to the specified directory.
 button	Moves up to the directory one layer above.
 button	Updates the contents displayed in the file view.
File view	Displays a list of folders and files in the path specified for "Directory".

2. Click the  button.

→ The selected data logging file is displayed as a trend graph.
(An event list is displayed when the event logging file is selected.)

Point

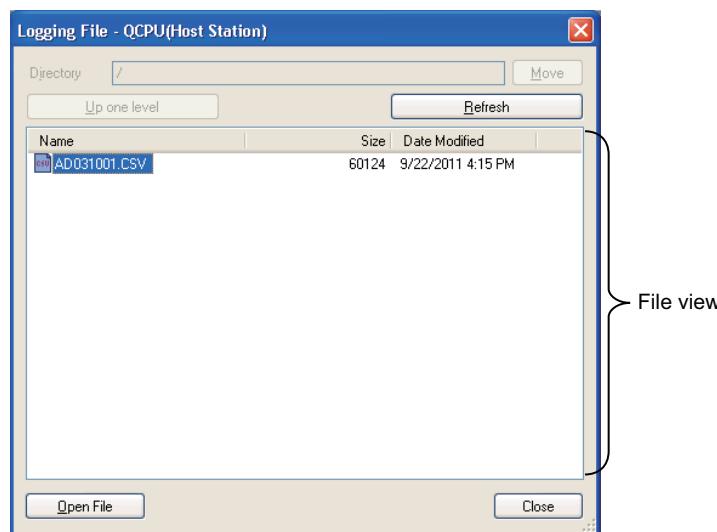
For details of the access authentication, refer to the following manual.
 High Speed Data Logger Module User's Manual

(3) Displaying logging files saved with the logging function of Q/L Series Analog Module

Data logging files stored in an ATA card or an SD memory card with the logging function of Q/L Series Analog Module are displayed with Historical trend.

Screen display

1.  [Online] ⇒ [Open Logging File] ()
2. Select "QCPU" or "LCPU" on the Connection Destination screen.
3. Specify a QCPU or an LCPU to be connected with and its route on the Transfer Setup screen.
4. Cancel the access restriction on the Enter remote password screen. (Only when the remote password is set.)



Operating procedure

1. Select a data logging file (***.CSV) in the file view. (Multiple files cannot be selected.)

Item	Description
Directory *1	Displays a path of the directory being displayed in the file view. Or, specify the directory.
 button *1	Moves to the specified directory.
 button	Updates the contents displayed in the file view.
File view	Displays a list of folders and files in the path specified for "Directory".

*1 : Available only when save destination is set for an SD memory card.

2. Click the  button.

→ The selected data logging file is displayed as a trend graph.

Point

For details of remote password, refer to the following manuals.

-  QnUCPU User's Manual (Function Explanation, Program Fundamentals)
-  QCPU User's Manual (Function Explanation, Program Fundamentals)
-  MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)

(4) Displaying data logging files or sampling trace data stored in a personal computer or in a memory medium connected to a personal computer

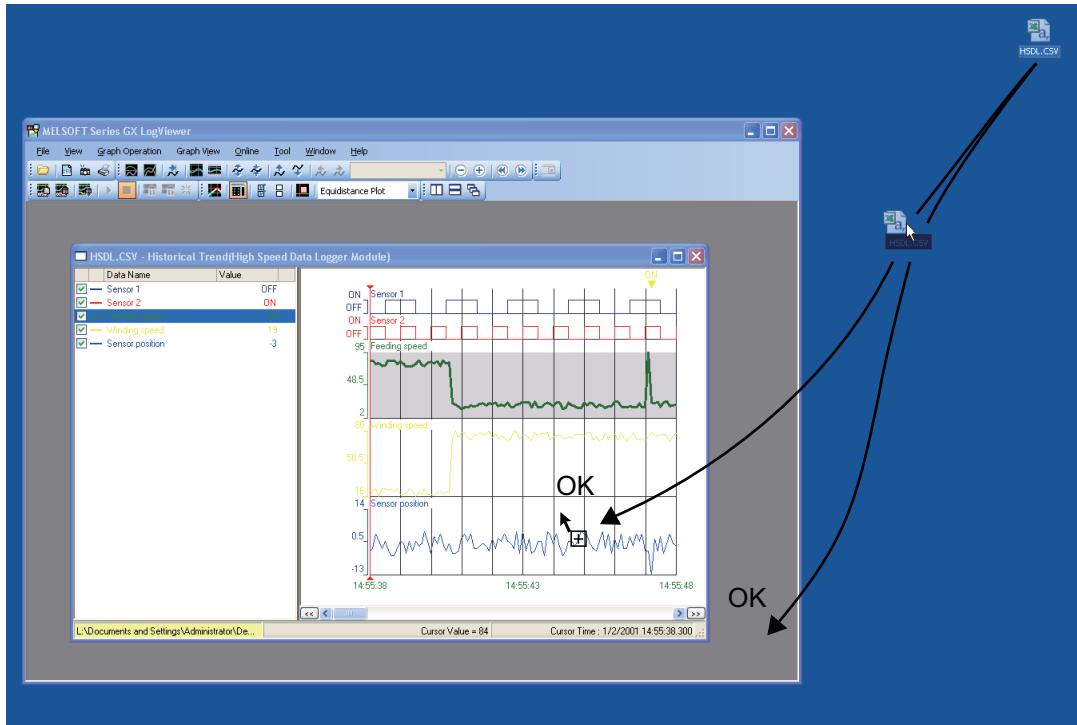
CSV files or binary files stored in a personal computer or a memory medium are displayed with Historical trend.

For saving logging files to a personal computer or to a memory medium, refer to the following chapter.

☞ Page 174, CHAPTER 11 SAVING LOGGING FILES TO PERSONAL COMPUTER

Operating procedure

-  **[File] ⇒ [Open] ()**
- **Drag and drop the data logging file or the sampling trace data to the main widow.**
(Example: Displaying "HSDL.CSV" on the desktop)



9.3.2 Displaying current devices (Realtime trend)

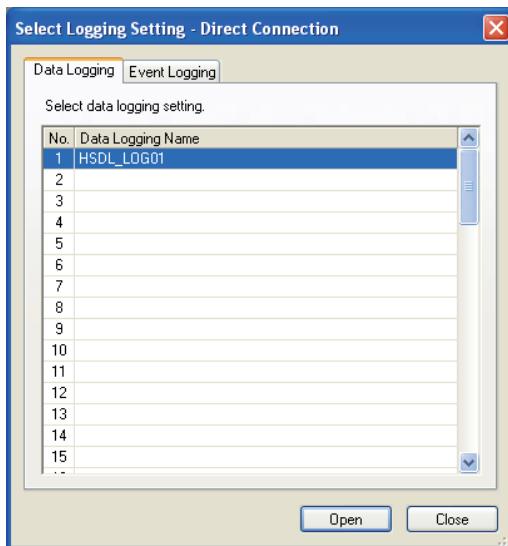


With Realtime trend, a data logging setting of the module is specified, and data are displayed on the trend graph.

(1) Displaying current device status of High speed data logger module on the trend graph

Screen display

1. [Online] \Rightarrow [Realtime Monitor] ()
2. Specify a High Speed Data Logger Module to be connected with on the Transfer Setup screen.
3. Cancel the access restriction on the Access Authentication screen. (Only when the access restriction is set.)



Operating procedure

1. Select a data logging setting from the list.

Item	Description
<<Data Logging>> tab	Displays the list of data logging settings.
<<Event Logging>> tab	Displays the list of event logging settings. Page 161, Section 10.3.2
No.	Displays the number of a data logging setting.
Data Logging Name	Displays a name of a data logging setting specified in the High Speed Data Logger Module configuration tool

2. Click the button.

→ Trend graphs of the selected data logging setting is displayed.

Point

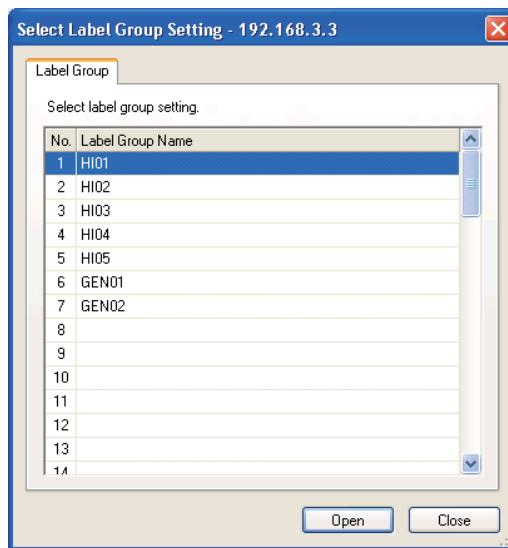
For details of the access authentication, refer to the following manual.

High Speed Data Logger Module User's Manual

(2) Displaying current device status of High speed data communication module on the trend graph

Screen display

1.  [Online] \Rightarrow [Realtime Monitor] ()
2. Specify a High Speed Data Communication Module to be connected with on the Transfer Setup screen.
3. Cancel the access restriction on the Access Authentication screen. (Only when the access restriction is set.)



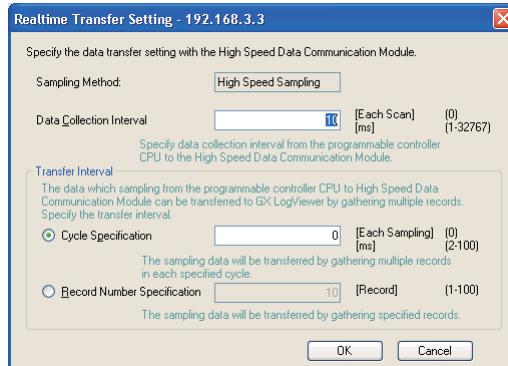
Operating procedure

1. Select a data logging setting from the list.

Item	Description
<<Label Group>> tab	Displays the list of label group settings.
No.	Displays the label group setting.
Label Group Name	Displays a name of a label group setting specified in the High Speed Data Communication Module configuration tool (When the access authentication is allowed to read)

2. Click the  button.

→ The following screen is displayed.



3. Set the data transfer settings between High Speed Data Communication Module on the Realtime Transfer Setting screen.

Item	Description	
Sampling Method	Displays the sampling method (high speed sampling/general sampling) acquired from High Speed Data Communication Module.	
Data Collection Interval	Specify the logging data sampling interval. High speed sampling: 1 to 32767ms General sampling: 0.1 to 32767s (When sampling each sequence scan, specify '0'.)	
Transfer Interval	When sampling method is "High Speed Sampling", specify the transfer interval to GX LogViewer.	
Transfer Interval	Cycle Specification	Transfers the data with every specified cycle. 2 to 100ms (sampling interval is the shortest) (When synchronizing with data sampling interval, specify '0'.)
	Record Number Specification	Transfers the specified record number of data. 1 to 100 records

4. Click the  button.

→ Trend graphs of the selected data logging setting is displayed.

Point 

For details of the access authentication, refer to the following manual.
 High Speed Data Communication Module User's Manual

9.3.3 Operating realtime trend monitoring status



In Realtime trend, the following operations are used to change the monitoring status and control graphs.

- Starting monitoring
- Stopping monitoring
- Pausing graph update
- Restarting graph update
- Clearing graphs

(1) Starting monitoring

This operation starts the communication with a High Speed Data Logger Module/a High Speed Data Communication Module and turns the monitoring status from Stop to Run.

Operating procedure

☞ [Online] ⇒ [Begin Monitor] (▶)

The status of the tool buttons changes as shown below when monitoring.



(2) Stopping monitoring

This operation disconnects the communication with a High Speed Data Logger Module/a High Speed Data Communication Module and stops drawings of trend graphs.

Operating procedure

☞ [Online] ⇒ [End Monitor] (■)

The status of the tool buttons changes as shown below when monitoring is stopped.



(3) Pausing graph update

This operation pauses the drawings of trend graphs while the communication with a High Speed Data Logger Module/a High Speed Data Communication Module is continued. (Data sampling is continued.)

Operating procedure

⌚ [Online] ⇒ [Pause Monitor] ()

The status of the tool buttons changes as shown below when monitoring is paused.

<Monitoring: Run>



<Monitoring: Pause>



(4) Restarting graph update

This operation restarts the drawings of trend graphs from the paused status of the monitoring.

Data sampled while the monitoring is paused are not displayed on the graph temporarily, but after the monitoring is restarted, they are displayed on the trend graphs.

Operating procedure

⌚ [Online] ⇒ [Restart Monitor] ()

The status of the tool buttons changes as shown below when monitoring is restarted.

<Monitoring: Pause>



<Monitoring: Run>



(5) Clearing graphs

This operation clears trend graphs drawn in the graph area.

The drawings of graphs from the sampled data are restarted immediately after clearing the graphs.

Operating procedure

⌚ [Online] ⇒ [Clear Graph] ()

9.4 Checking Data

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

This section explains the following operations for checking data displayed on a trend window.

- Checking and comparing data values/status (☞ Page 106, Section 9.4.1)
- Adding/deleting data to/from graph legend area (☞ Page 108, Section 9.4.2)

9.4.1 Checking and comparing data values/status

Data values/status on a trend graph are checked or compared by the following operations.

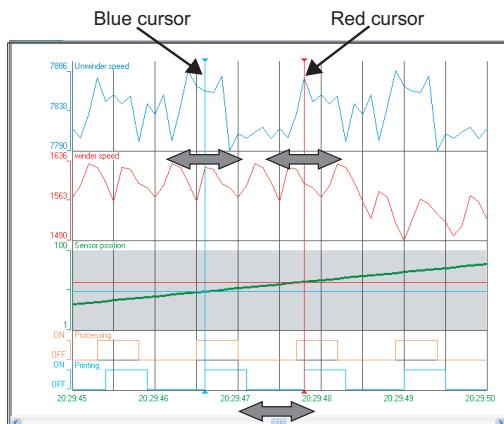
- Moving cursors
- Checking data values/status
- Comparing data values/status

Remark

- When operating the cursors in Realtime trend, stop or pause the monitoring.
- In order to display the blue cursor, the multiple cursor function needs to be activated. For details of the multiple cursor function and difference information area, refer to the following sections.
☞ Page 134, Section 9.6.1 Displaying multiple cursor
☞ Page 93, Section 9.2.4 Difference information area

(1) Moving cursors

Operating procedure



(a) Moving the red cursor

- Drag the red cursor right/left using a mouse.
- Press the **Ctrl** + **←** / **→** keys.
- Right-click at the desired position (to which the cursor moves) on the graph area, and select [Move Red Cursor Here].

(b) Moving the blue cursor

- Drag the blue cursor right/left using a mouse.
- Press the **Shift** + **←** / **→** keys.
- Right-click at the desired position (to which the cursor moves) on the graph area, and select [Move Blue Cursor Here].

(c) Moving the red cursor and the blue cursor simultaneously

- Drag the red cursor or the blue cursor while pressing the **Shift** + **Ctrl** keys.
- Press the **Shift** + **Ctrl** + **←** / **→** keys.

(d) Moving the graph right/left only without moving the cursors

- Move the horizontal scroll bar right/left on the trend window.
- Press the **PageUp** key or **PageDown** key.

(e) Moving the cursor by specifying value/time/index

The cursor jump function moves the cursor to a specified position (value/time/index).

For details of the cursor function, refer to the following section.

☞ Page 116, Section 9.5.4 Moving cursor by specifying value/time/index (Jump cursor)

(2) Checking data values/status**Operating procedure****(a) Checking values/status using the red cursor**

1. Move the red cursor to the position where data are checked.
2. Check the values displayed in the "Cursor Value" and "Cursor Time"/"Cursor Index" fields on the status bar.

(b) Checking values/status using the blue cursor

1. Move the blue cursor to the position where data are checked.
2. Check the values displayed in the "Value (Blue)" and "Time (Blue)"/"Index (Blue)" fields of the difference information area.

Point

- The data value can also be displayed at the cursor label by selecting [Graph View] ⇒ [Cursor Label].
- The cursor can be moved to the plot position (the observation point) of the selected file, but can not be moved to the position between the plot. However, when displaying multiple files on the same trend window, the cursor may be moved to the file between the plot which is not selected. In this case, the data value at the cursor is displayed as an estimated value obtained by linear interpolation, and displayed in parentheses.

(3) Comparing data values/status**Operating procedure**

1. Move the red cursor and the blue cursor to the two positions where data are compared.
2. The values/status are compared by the differences displayed in the "Difference (Blue → Red)" and "Span (Blue → Red)" fields of the difference information area.

9.4.2 Adding/deleting data to/from graph legend area

Add/Delete the data to be displayed on the graph legend area. Also, add/delete the logging data in another file to/from the graph legend area on the same trend window.

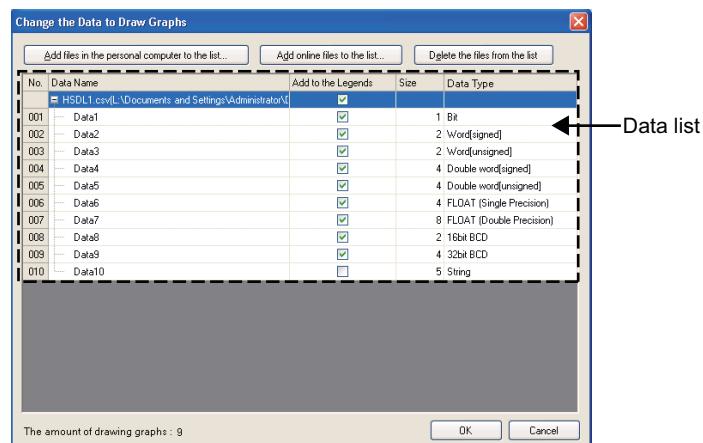
When adding the logging data of another file, in case the display format is set to equidistance plot, it is changed to time interval plot.

For the details of time interval plot format, refer to the following section.

☞ Page 136, Section 9.6.4 Switching graph plot format

Screen display

☞ [Graph View] ⇒ [Change the Data to Draw Graphs]



Display contents

Item	Description		
No.	Displays a data number.		
Data Name	Displays the file name and the path.		
Add to the Legends	Displays the status of the graph legend area. The selected data is displayed on the graph legend area. The maximum of 32 data can be selected.		
Size	Displays the data size. (unit: byte)		
Data Type	Displays the data type. <ul style="list-style-type: none">• Bit• Word[signed]• Word[unsigned]• Double word[signed]• Double word [unsigned]• Single-precision real• Double-precision real• 16bit BCD• 32bit BCD• String• Raw		
The amount of drawing graphs	The number of data which is selected on "Add to the Legends".		

Operating procedure**(1) Adding/Deleting data****(a) Adding data to graph legend area****Operating procedure**

1. Select data to be displayed on the graph legend area from "Add to the Legends" column.
2. Click the  button.
→ The selected data is added to the graph legend area.

(a) Deleting data from graph legend area**Operating procedure**

1. Clear the check box to be deleted on the graph legend area from "Add to the Legends" column.
2. Click the  button.
→ The selected data is deleted from the graph legend area.

(2) Adding/Deleting logging data in another file

(a) Adding the data stored in a personal computer to graph legend area

Operating procedure

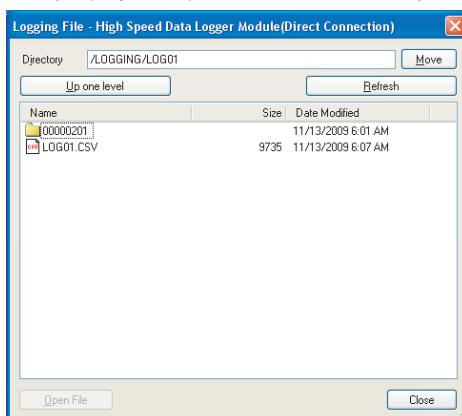
1. Click the button, and select the file to be added.
→ The selected file is added to the data list, and displayed the data name.
When display format is set to equidistance plot, it is changed to time interval plot.
2. Select the data to be displayed on the graph legend area from "Add to the Legends".
3. Click the button.
→ The selected data is added to the graph legend area.

(b) Adding the data stored in a transfer destination module to graph legend area

Operating procedure

1. Click the button.
→ The Connection Destination screen is displayed.
2. Set the transfer destination. Page 71, CHAPTER 8
3. Select the file to be added on the Logging File screen.

(Display example : F Direct connection)



4. Click the button.
→ The selected file is added to the data list, and displayed the data name.
When display format is set to equidistance plot format, it is changed to time interval plot format.
5. Select the data to be displayed on the data list from "Add to the Legends".
6. Click the button.
→ The selected data is added to the graph legend area.

Point

- The file can also be added by dragging and dropping the logging file stored in a personal computer to the data list.

(c) Deleting added file

Operating procedure

- Select the file to be deleted on the data list, and click the button.
→ The selected file is deleted.

9.5 Adjusting Trend Graphs

QnUDVCPU **High Speed Data Logger** **High Speed Data Communication** **Q Analog** **LCPU** **L Analog**

This section explains the method for adjusting trend graphs.

The efficiency of data check can be improved by adjusting trend graphs.

- Displaying/hiding graphs (☞ Page 111, Section 9.5.1)
- Aligning graphs (☞ Page 114, Section 9.5.2)
- Superimposing graphs (☞ Page 115, Section 9.5.3)
- Moving cursor by specifying value/time/index (Jump cursor) (☞ Page 116, Section 9.5.4)
- Specifying upper/lower limit display value (☞ Page 123, Section 9.5.5)
- Scaling graph up/down (☞ Page 126, Section 9.5.6)
- Moving graph (up/down/left/right) (☞ Page 126, Section 9.5.6)
- Expanding/reducing time scale (☞ Page 129, Section 9.5.8)
- Displaying consecutive previous/next trend graph (☞ Page 129, Section 9.5.9)

Point

- Upper/lower limit display value, scaling graph up/down, and expanding/reducing time scale
Graph display information can be named and registered to be reflected to other windows.
☞ Page 144, Section 9.8 Registering and Reflecting Graphical Display Settings of Trend Windows
Graph display can be set to be reflected automatically when opening the same data logging setting window next time.
☞ Page 148, Section 9.9 Reflecting a Graph Display Automatically When Opening a File

9.5.1 Displaying/hiding graphs

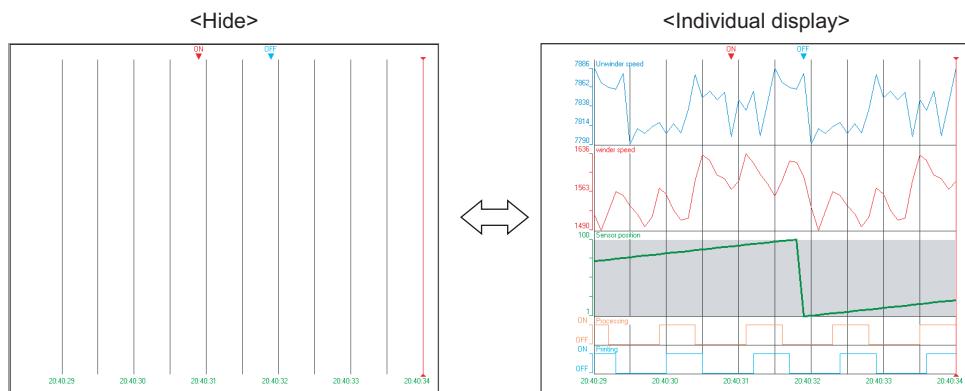
This function displays/hides trend graphs in the trend graph area by the following operations.

- Individual display/hide
- Batch display
- Batch hide

(1) Individual display/hide

This function displays/hides graphs of data that are selected individually from the graph legend area.

Screen display



Operating procedure

The following shows the operation for the individual display.

<Checking the check box of graph legend>

	Data Name	Value	
<input type="checkbox"/>	Unwinder speed	7886	
<input checked="" type="checkbox"/>	winder speed	1583	
<input type="checkbox"/>	Sensor position	22	
<input checked="" type="checkbox"/>	Processing	OFF	To display: Check To hide: Uncheck
<input type="checkbox"/>	Printing	ON	

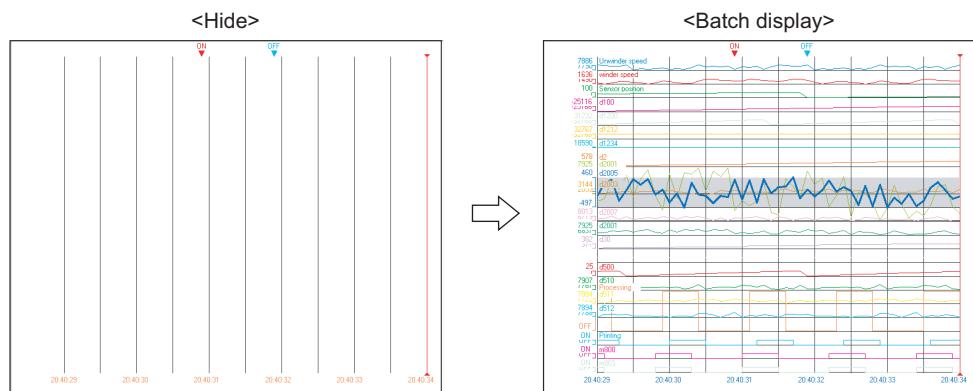
<Double-clicking data on the graph legend area>

	Data Name	Value	
<input type="checkbox"/>	Unwinder speed	7886	
<input checked="" type="checkbox"/>	winder speed	1583	
<input type="checkbox"/>	Sensor position	22	
<input checked="" type="checkbox"/>	Processing	OFF	Switches display/hide setting by double-clicking "Data Name" or "Value".
<input type="checkbox"/>	Printing	ON	

(2) Batch display

This function displays trend graphs of all data in the graph legend area.

Screen display



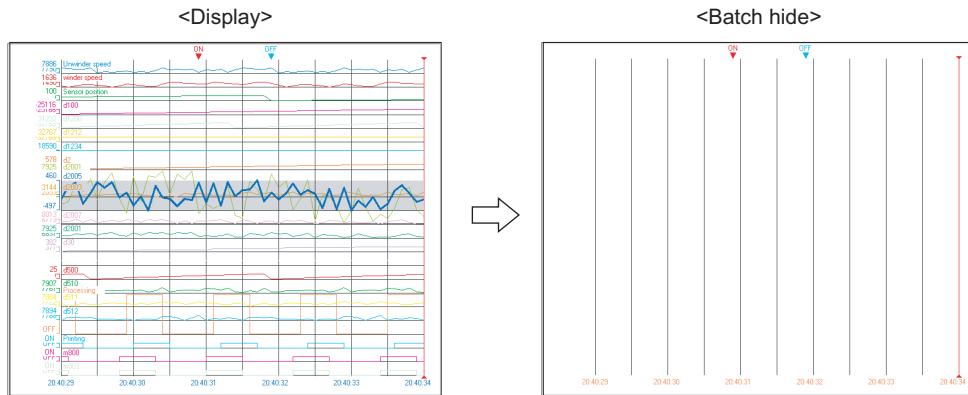
Operating procedure

-  [Graph View] \Rightarrow [Show All Graphs] ()
- Right-click on the graph legend area, and select [Show All Graphs].
- Right-click on the graph area, and select [Show All Graphs].

(3) Batch hide

This function hides trend graphs of all data in the graph legend area.

Screen display



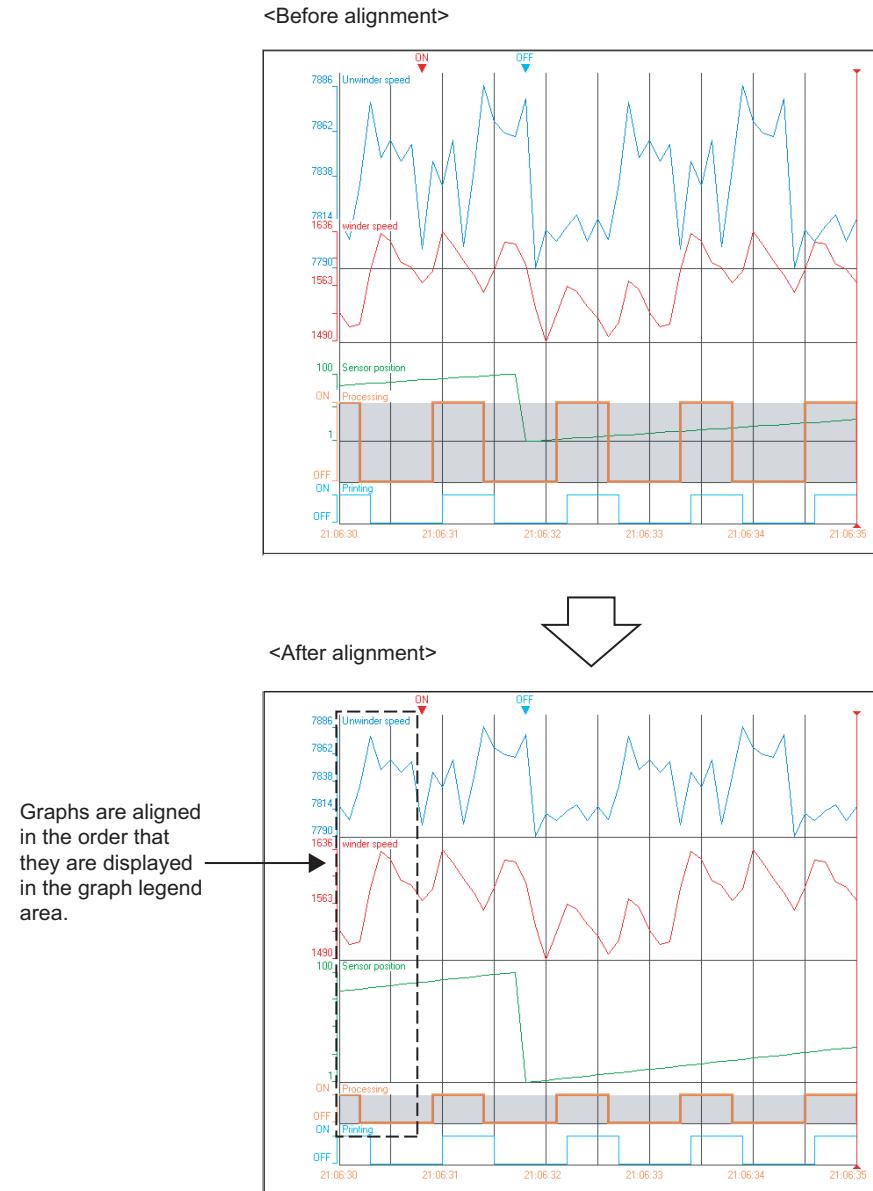
Operating procedure

- [Graph View] \Rightarrow [Hide All Graphs] ()
- Right-click on the graph legend area, and select [Hide All Graphs].
- Right-click on the graph area, and select [Hide All Graphs].

9.5.2 Aligning graphs

This function aligns all trend graphs displayed in the graph area without overlapping.

Screen display



Operating procedure

-  [Graph Operation] \Rightarrow [Graph Alignment] ()
- Right-click on the graph legend area, and select [Graph Alignment].
- Right-click on the graph area, and select [Graph Alignment].

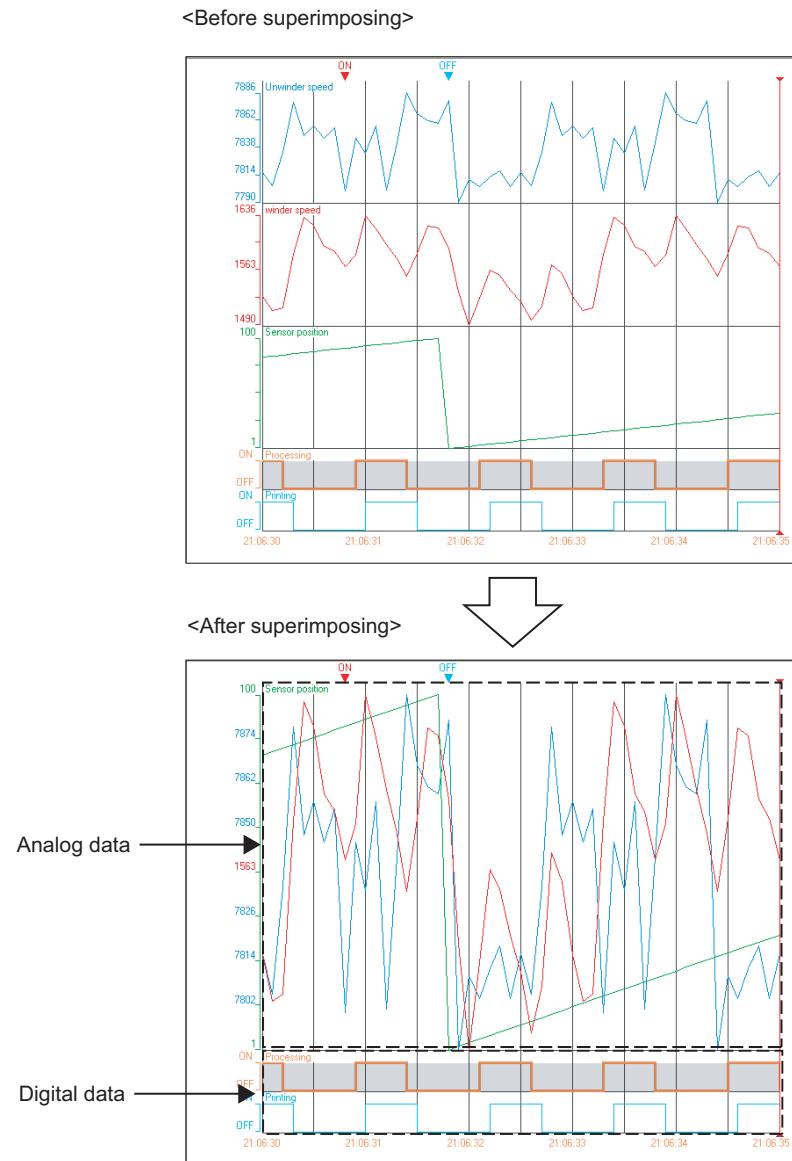
Remark

Graphs are aligned in the order that they are displayed in the graph legend area.

9.5.3 Superimposing graphs

This function displays all trend graphs displayed in the graph area superimposed.

Screen display

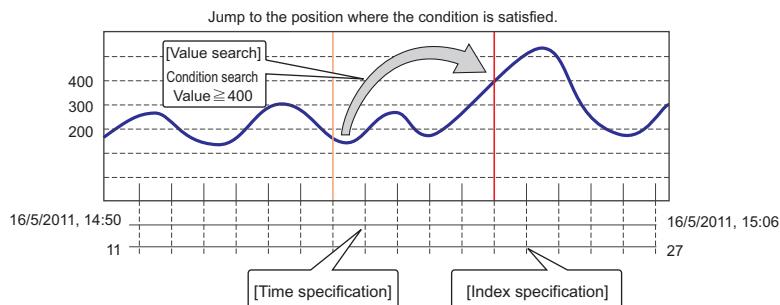


Operating procedure

-  [Graph Operation] \Rightarrow [Graph Superimpose] ()
- Right-click on the graph legend area, and select [Graph Superimpose].
- Right-click on the graph area, and select [Graph Superimpose].

9.5.4 Moving cursor by specifying value/time/index (Jump cursor)

Data values/status are checked by moving the cursor to the specified value/time/index position on the trend graph. Q/L Series Analog Module does not have time information, therefore only cursor jump specified value and index are available.

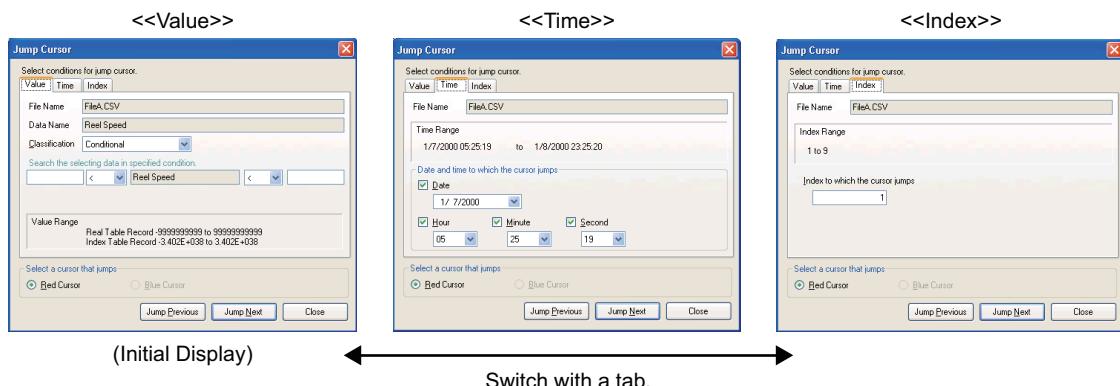


Point

When performing the cursor jump in realtime trend, stop or pause the monitoring.

Screen display

- [Graph Operation] ⇒ [Jump Cursor] ()
- Right-click on the graph legend area or the graph area, and select [Jump Cursor].



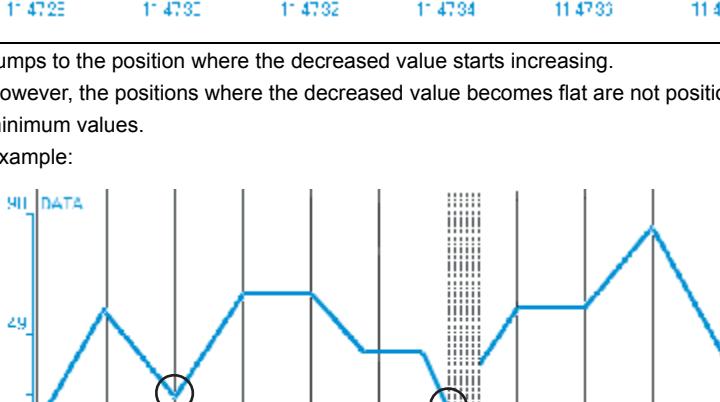
Screen display

Item	Description
Tab	The displayed items and the operating procedures are described on the following reference pages.
Value	Page 117, (1) in this section
Time	Page 121, (2) in this section
Index	Page 122, (3) in this section
Select a cursor that jumps	-
Red Cursor	Select this to jump the red cursor.
Blue Cursor	Select this to jump the blue cursor.
<input type="button" value="Jump Previous"/> button	Moves the cursor to the position before the current cursor position where the specified condition is satisfied.
<input type="button" value="Jump Next"/> button	Moves the cursor to the position after the current cursor position where the specified condition is satisfied.

(1) Jump cursor by searching value

Search the value by the following methods and jump the cursor to the position where the condition is satisfied.

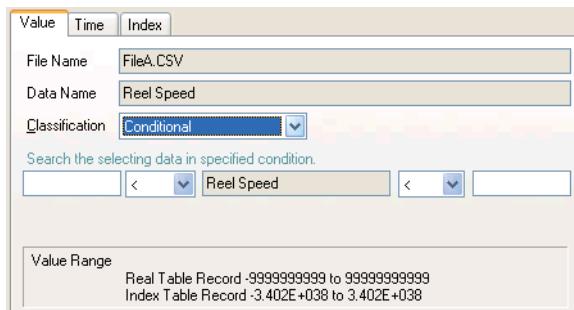
Search type is different according to the data type of the selected data.

Search Type	Description
When the data type is bit	-
UP	Jumps to the position where the selected data turned from OFF to ON for the first time.
Down	Jumps to the position where the selected data turned from ON to OFF for the first time.
Comparison	Compares the values of the selected data and the specified data, and jumps to the position where the condition is satisfied. Page 120, (1)(b) in this section
When the data type is other than bit	-
Conditional	Searches the value by specifying the condition, and jumps to the position where the condition is satisfied. Page 118, (1)(a) in this section
Max	Jumps to the first maximum value of the selected data.
Min	Jumps to the first minimum value of the selected data.
Maximal	<p>Jumps to the position where the increased value starts decreasing. However, the positions where the increased value becomes flat are not positions of maximum values.</p> <p>Example:</p> 
Minimal	<p>Jumps to the position where the decreased value starts increasing. However, the positions where the decreased value becomes flat are not positions of minimum values.</p> <p>Example:</p> 
Comparison	Compares the values of the selected data and the specified data, and jumps to the position where the condition is satisfied. Page 120, (1)(b) in this section

(a) Condition search

Screen display

- Select "Conditional" from "Classification".



Operating procedure

1. Specify conditions and values.

Item	Description	
	Enter a value for the condition within the following range.	
① (Left side value)	Data type of the selected data	Range
	16-bit integer with sign	-32768 to 32767
	16-bit integer without sign	0 to 65535
	32-bit integer with sign	-2147483648 to 2147483647
	32-bit integer without sign	0 to 4294967295
	Real number	-999999999 to 999999999
	Single-precision floating-point	Exponent -3.402E+038 to 3.402E+038
	Double-precision floating-point	Real number -999999999 to 999999999 Exponent -1.797E+308 to 1.797E+308
② (Left side condition operator)	BCD type 16-bit integer	0 to 9999
	BCD type 32-bit integer	0 to 99999999
③ (Selected data name)	Select from "< , <=, =, >, None".	
④ (Right side condition operator)	Displays the data name of the selected data.	
⑤ (Right side value)	Select from "< , <=, =, >, None".	
	Enter a value for the condition. (For the entering range, refer to ①.)	

2. Select the color of the cursor.

3. Click the **Jump Previous** button or the **Jump Next** button.

→ The value is searched toward the specified direction from the current cursor position, and the cursor jumps to the position where the condition is satisfied.

The following shows the examples of specifying condition search range.

- When searching for a value in a range between 0 and 100, use both condition combo boxes.

Search the selecting data in specified condition.

0	<=	Measured data B	<=	100
---	----	-----------------	----	-----

- When searching for a value less than 1000, use the condition box on the right side only.

Search the selecting data in specified condition.

0	None	Measured data B	<	1000
---	------	-----------------	---	------

- When searching for a value -1000 or more, use the condition box on the left side only.

Search the selecting data in specified condition.

-1000	<=	Measured data B	None	
-------	----	-----------------	------	--

- When searching for a value 2500, use the condition box on either side.

Search the selecting data in specified condition.

	None	Measured data B	=	2500
--	------	-----------------	---	------

- When searching for a value other than -15000, use the condition box on either side.

Search the selecting data in specified condition.

-15000	<>	Measured data B	None	
--------	----	-----------------	------	--

Point

- Notes on floating-point

A rounding error occurs when searching for a floating-point value.

When a single-precision/double-precision floating-point is entered to the left/right side of the text box, the exponent is normalized by rounding off to two decimal places. A single-precision real number is rounded to 7 significant digits. For data values, single-precision and double-precision values are rounded to 7 and 15 significant digits respectively.

A comparison with a value which exceeded the number of significant values cannot be performed.

When checking a match with a value which exceeded the number of significant values, compare the value with values between the approximate values.

Example: Checking a match with 1.23456E+10

1.234E+010	<	Measured data B	<	1.235E+010
1.234E+010	1.23456E+010	1.235E+010		

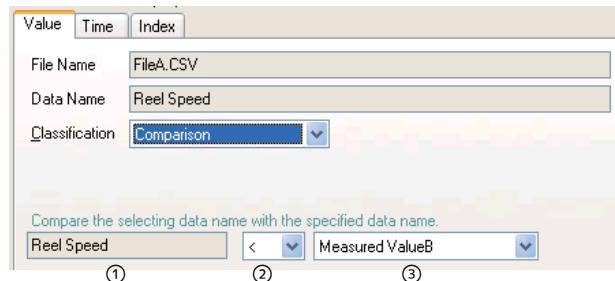
Check a match with values within this range. (Boundary values are not included.)

(b) Comparison of values between data names

Screen display

- Select "Comparison" from "Classification".

(If data whose data type is the same as the selected data does not exist, the item is not displayed for "Classification".)



Operating procedure

1. Specify a condition and a data name.

Item	Description
① (Selected data name)	Displays a selected data name.
② (Condition operator)	< When the data type is bit > Select from "=, <>". < When the data type is other than bit > Select from "<, <=, >, >=, =, <>".
③ (Comparison target data name)	Select a comparison target data name. Displays a data name whose data type is the same as the selected data name in the combo box.

2. Select the color of the cursor.

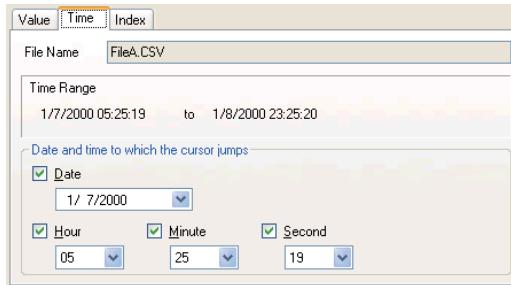
3. Click the **Jump Previous** button or the **Jump Next** button.

→ The value is searched toward the specified direction from the current cursor position, and the cursor jumps to the position where the condition is satisfied.

(2) Jump the cursor by specifying time

Screen display

- Click the <<Time>> tab on the Jump Cursor screen.



Operating procedure

- Specify the time to which the cursor jumps.

Item	Description
Date	Select this to specify "Date" as a condition.
Hour	Select this to specify "Hour" as a condition.
Minute	Select this to specify "Minute" as a condition.
Second	Select this to specify "Second" as a condition.

- Select the color of the cursor.

- Click the **Jump Previous** button or the **Jump Next** button.

→ The cursor jumps to the specified time.

The following table shows the setting examples of time condition and their operation results.

Item	Operation result
Second	Jumps to the specified second per minute.
Example ^{*1} : Result:	Specify "30" for the second only. 10/09/2009 19:36:30 ← previous ← 10/09/2009 19:37:30 → next → 10/09/2009 19:38:30
Minute	Jumps to the specified minute per hour.
Example ^{*1} : Result:	Specify "30" for the minute only. 10/09/2009 18:30:00 ← previous ← 10/09/2009 19:30:00 → next → 10/09/2009 20:30:00
Hour	Jumps to the specified hour per day.
Example ^{*1} : Result:	Specify "00" for the hour only. 10/09/2009 00:00:00 ← previous ← 10/10/2009 00:00:00 → next → 10/11/2009 00:00:00

*1 : The logging interval is set to 1 second.

(3) Jump the cursor by specifying index

Screen display

- Click the <<Time>> tab on the Jump Cursor screen.



Operating procedure

- Specify the index to which the cursor jumps.

Item	Description
Index to which the cursor jumps	Select the index to which the cursor jumps.

- Select the color of the cursor.

- Click the **Jump Previous** button or the **Jump Next** button.

→ The cursor jumps to the specified index.

9.5.5 Specifying upper/lower limit display value

This function specifies the upper limit display value and lower limit display value of the trend graph selected in the graph area.

The upper/lower limit value can be adjusted by the following two methods.

- Adjusting graph automatically
- Adjusting graph manually

(1) Adjusting graph automatically

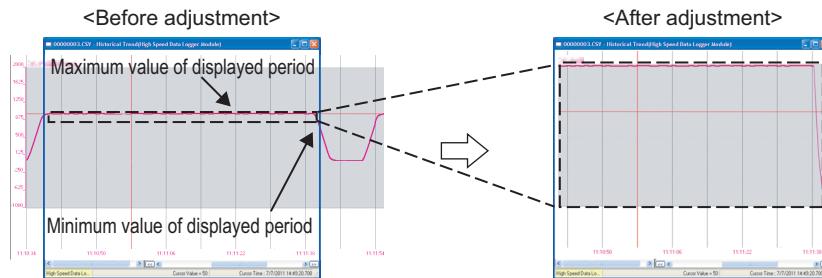
The following two methods are available.

- Adjusting within the displayed period: Adjusts the maximum/minimum value of the graph within the range displayed on the screen.
- Adjusting within the entire period: Adjusts the maximum/minimum value of the graph within the entire period.

(a) Adjusting within the displayed period

Screen display

Adjusting within the displayed period



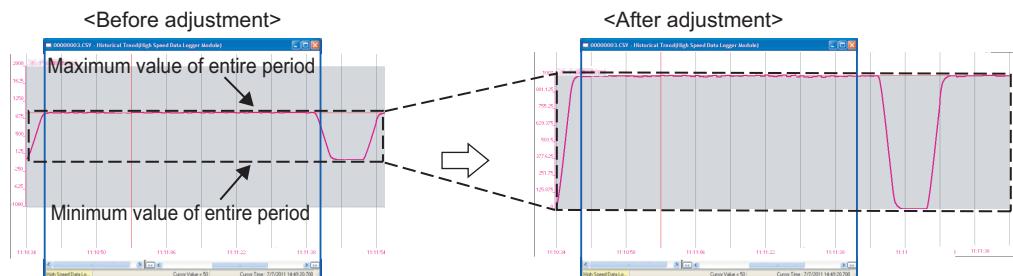
Operating procedure

- [Graph Operation] \Rightarrow [Auto Adjust Upper/Lower Bound] \Rightarrow [For Period on Display] ()
- Right-click on the graph legend area, and select [Auto Adjust Upper/Lower Bound] \Rightarrow [For Period on Display].
- Right-click on the graph area, and select [Auto Adjust Upper/Lower Bound] \Rightarrow [For Period on Display].

(b) Adjusting within the entire period

Screen display

Adjusting within the entire period



Operating procedure

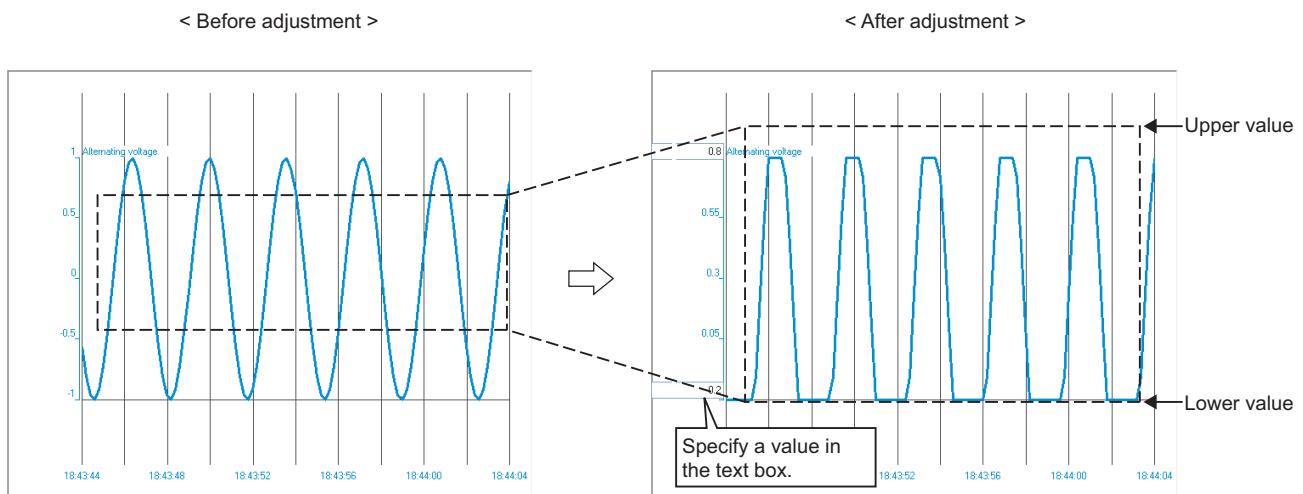
-  [Graph Operation] \Rightarrow [Auto Adjust Upper/Lower Bound] \Rightarrow [For All Period] ()
- Right-click on the graph legend area, and select [Auto Adjust Upper/Lower Bound] \Rightarrow [For All Period].
- Right-click on the graph area, and select [Auto Adjust Upper/Lower Bound] \Rightarrow [For All Period].

(2) Adjusting graph manually

For adjusting a graph manually, enter a value in the text box directly.

Data higher than the maximum value are displayed as the maximum value, and data less than the minimum value are displayed as the minimum value.

Screen display



Operating procedure

Display the text box by any of the following operations, and enter the upper/lower limit display value.

- Double-click the area of graph to be adjusted in the graph area.
-  [Graph Operation] \Rightarrow [Edit Upper/Lower Bound].
- After selecting the trend graph to be adjusted in the graph area, right-click and select [Edit Upper/Lower Bound].

(a) Entering upper/lower limit display value

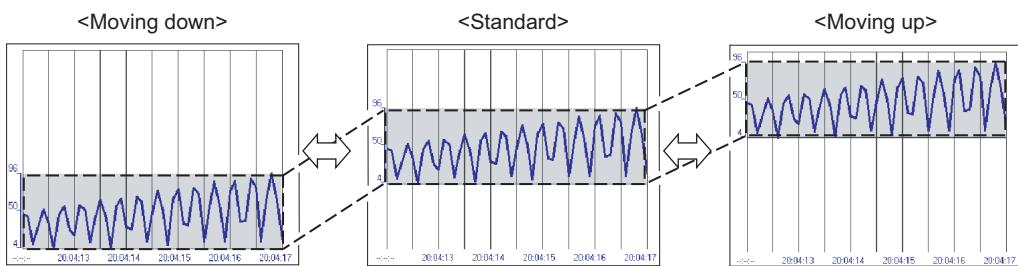
The following table shows the applicable ranges of values and data that can be entered in the text box of the upper/lower limit display value.

Item	Description
Applicable characters	<p>Numerals (0 to 9), alphabets ("E", "e"), signs ("-", "+", ".") Note that the alphabets ("E", "e") are for the exponent expression.</p> <p>Entered values are handled as values in a decimal fixed floating-point expression or decimal exponent expression.</p> <p>Example: "111" is not a binary number. It is "111" in decimal. "11E3" is not a hexadecimal number. It is "11000" in a decimal exponent expression.</p>
Applicable number of characters	A maximum of 11 characters
Applicable range	<p>Exponent expression: -1.797E+308 to -2.225E-308, 0, and 2.225E-308 to 1.797E+308 Fixed floating-point expression: -9999999999 to 9999999999 Note that the value condition, in which the upper limit display value is lower than or equal to the lower limit display value, is not applicable.</p>

9.5.6 Moving graph up/down

This function moves up or down the selected trend graph.

Screen display



(1) Moving up

Operating procedure

- [Graph Operation] ⇒ [Adjust Scale] ⇒ [Move Up Graph] ()
- Press the + + key
- Select a trend graph with a mouse and drag it upward.

(2) Moving down

Operating procedure

- [Graph Operation] ⇒ [Adjust Scale] ⇒ [Move Down Graph] ()
- Press the + + key
- Select a trend graph with a mouse and drag it downward.

9.5.7 Moving graph up/down/left/right

This function moves up or down the trend graph displayed on the graph area.

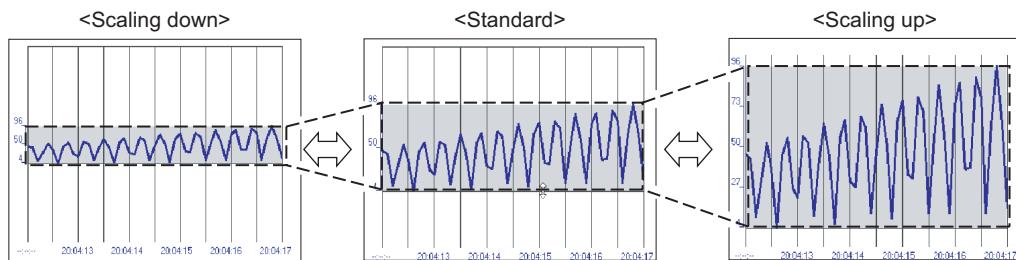
When multiple file logging data is displayed on the same graph area, the trend graph can also be moved left or right by setting the time unit to be moved.

For operation adding logging data, refer to the following section.

☞ Page 108, Section 9.4.2 Adding/deleting data to/from graph legend area

(1) Moving up/down

Setting screen



Operating procedure

- [Graph Operation] ⇒ [Adjust Graph Location] ⇒ [Move Up Graph] ()/[Move Down Graph] ()
- Press the + + key/ key
- Select a trend graph with a mouse and drag it upward/downward.

Point

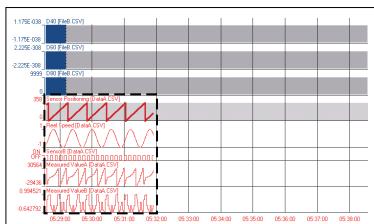
- When displaying multiple file logging data, all the data in the same file can be moved up or down by dragging a graph line upward or downward while pressing key.

(2) Moving left/right

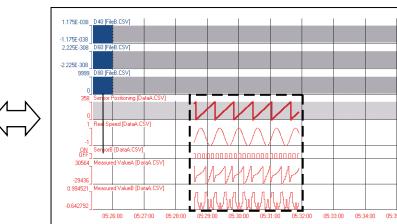
When displaying multiple file logging data with time interval plot, the graph can be moved to the left or right.

Screen display

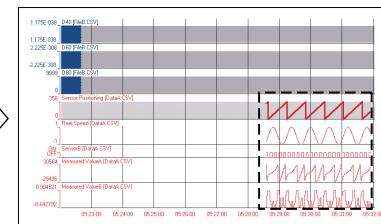
<Move to left>



<Standard>



<Move to right>



Operating procedure

- [Graph Operation] \Rightarrow [Adjust Graph Location] \Rightarrow [Move Graph to Left] ()/[Move Graph to Right] ()
- Press the + + key/ key.
- Select a trend graph with a mouse and drag it upward/downward.

(3) Setting the time unit move to left/right

When moving a graph to left or right, set the time unit to be moved.

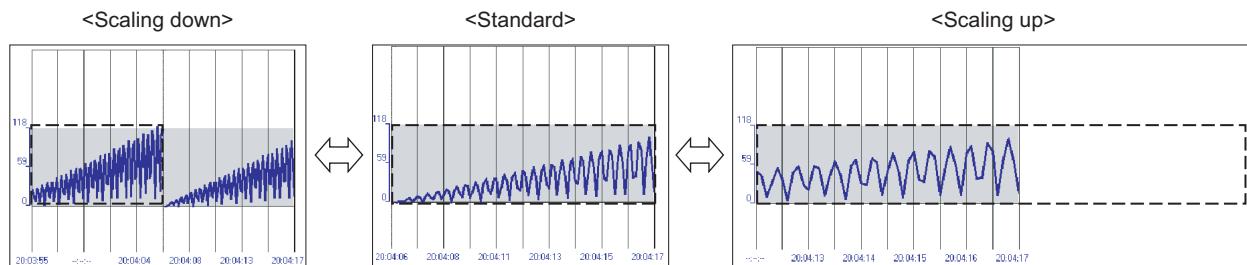
Operating procedure

- [Graph Operation] \Rightarrow [Adjust Graph Location] \Rightarrow [Horizontal Moving Quantity] \Rightarrow [1ms] to [12h] : Select from 24 phases.
- The combo box of the toolbar \Rightarrow [1ms] to [12h] : Select from 24 phases.

9.5.8 Expanding/reducing time scale

This function expands/reduces the time scale in the graph area.

Screen display



(1) Expanding time scale

Operating procedure

- [Graph Operation] \Rightarrow [Adjust Time Scale] \Rightarrow [Expansion Time Scale] ()
- Press the + key

(2) Reducing time scale

Operating procedure

- [Graph Operation] \Rightarrow [Adjust Time Scale] \Rightarrow [Reduction Time Scale] ()
- Press the + key

9.5.9 Displaying consecutive previous/next trend graph

Normally, one data logging file is displayed on a historical trend window. However, the previous/next data logging file can be displayed simultaneously by using this function.

This enables the consecutive view of divided data logging files.

The logging data sampled by High speed data communication module, Q/L Analog Module, or Energy Measurement Unit and sampling trace data are not supported by this function.

Point

- The previous/next data logging file in CSV or binary format can be displayed.
- The previous/next data logging file may not be displayed if any of the following operations is performed using a data logging file stored in a personal computer.
 - If the previous/next data logging file cannot be displayed, create the same folder configuration as the one under '/LOGGING' in an SD memory card or a CompactFlash card before operating.
 - A name of a folder or data logging file under the data name has been changed.
 - The previous/next data logging file has been deleted.
 - File names of data logging files are not in series.

(1) Displaying previous graph

Operating procedure

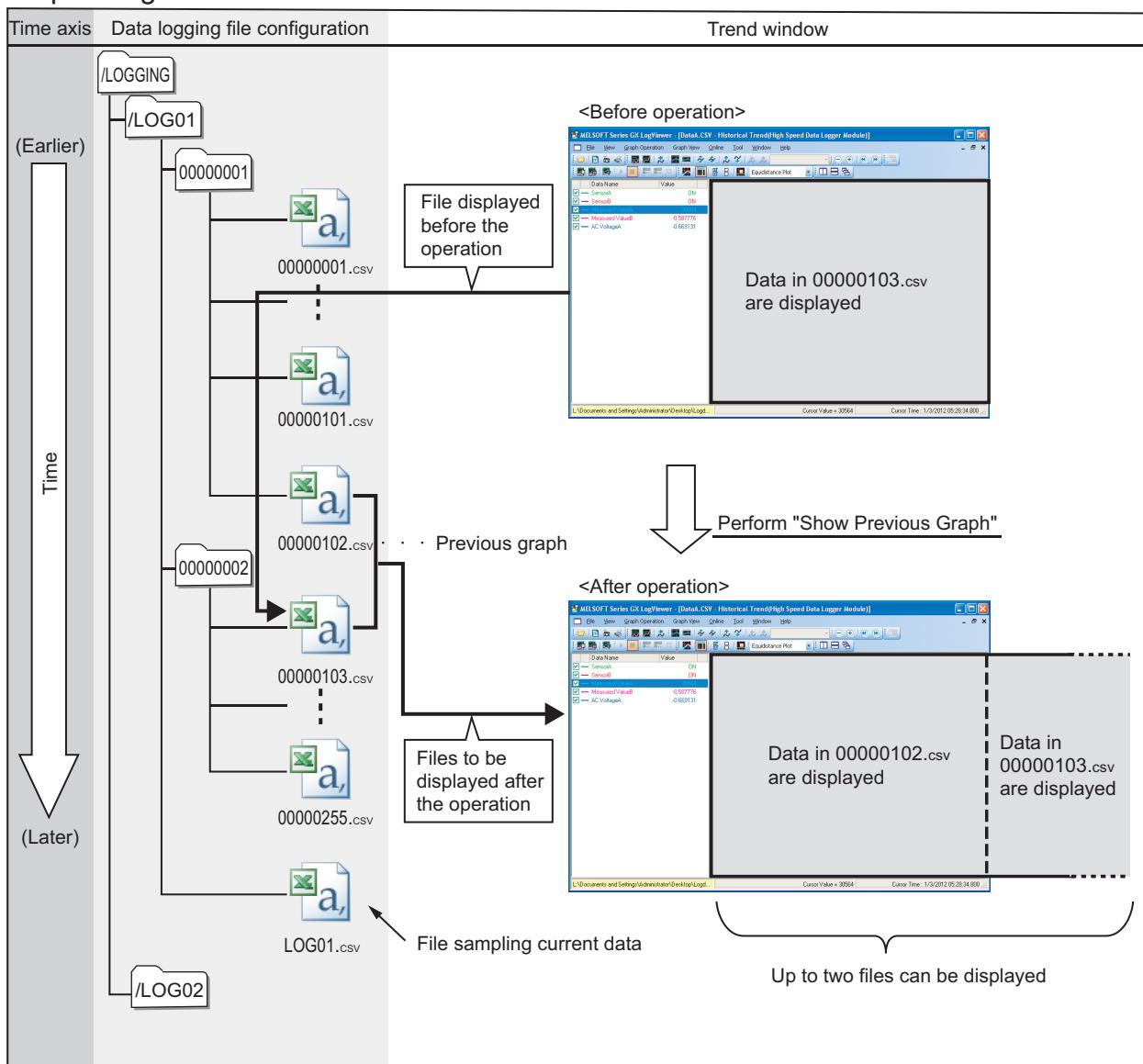
-  [Graph Operation] ⇒ [Show Previous Graph] (- Click the  button.

Screen display

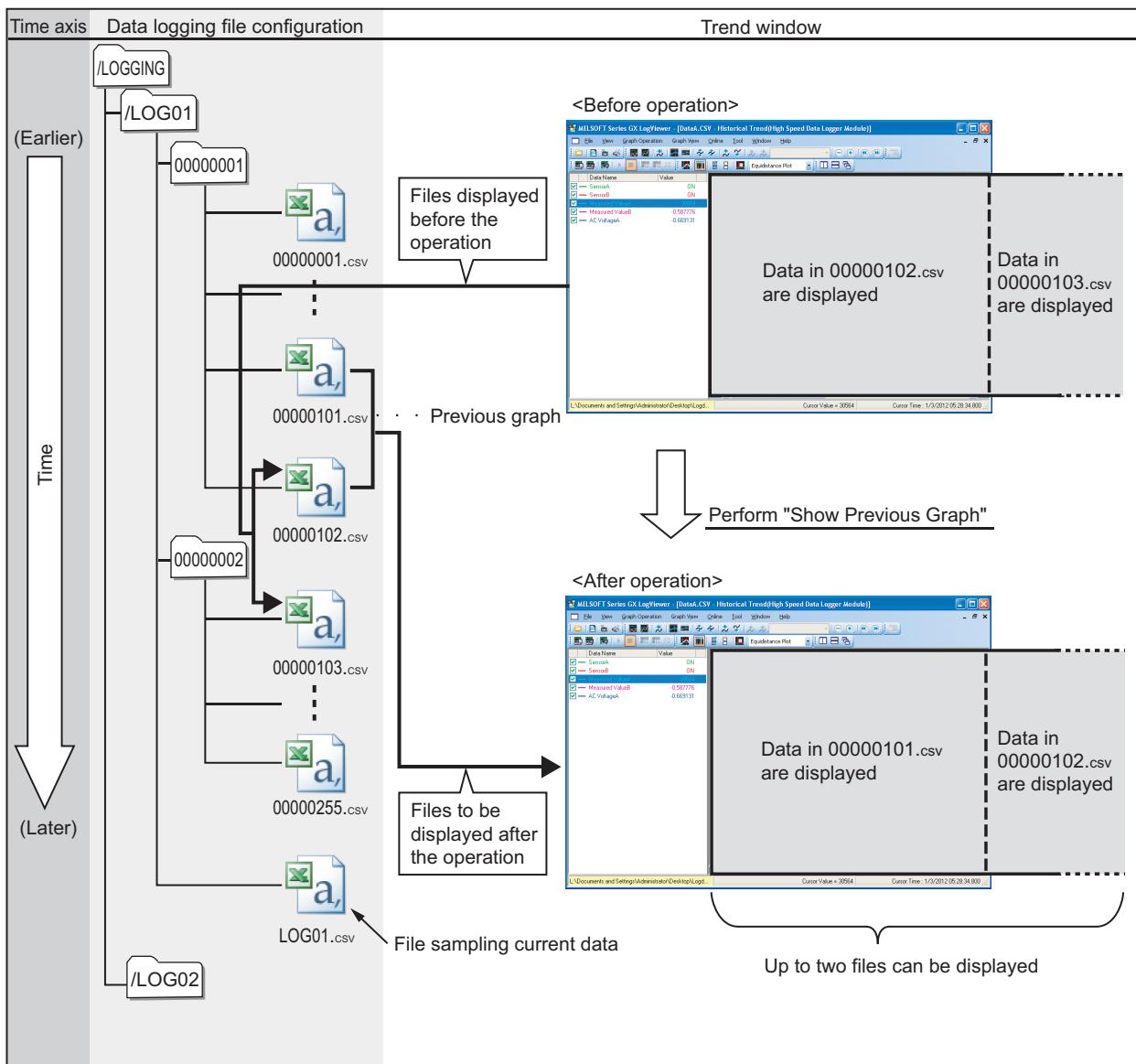
Either of the following two operations is used for displaying data logging files when performing the "Show Previous Graph" function.

- Operating from the status when only one data logging file is displayed.
- Operating from the status when the previous data logging file is already displayed.

<Operating from the normal status>



<Operating from the status when the previous graph is already displayed>



Point

The "Show Previous Graph" function cannot be performed to a data logging file whose serial number is the smallest number.

(2) Displaying next graph

Operating procedure

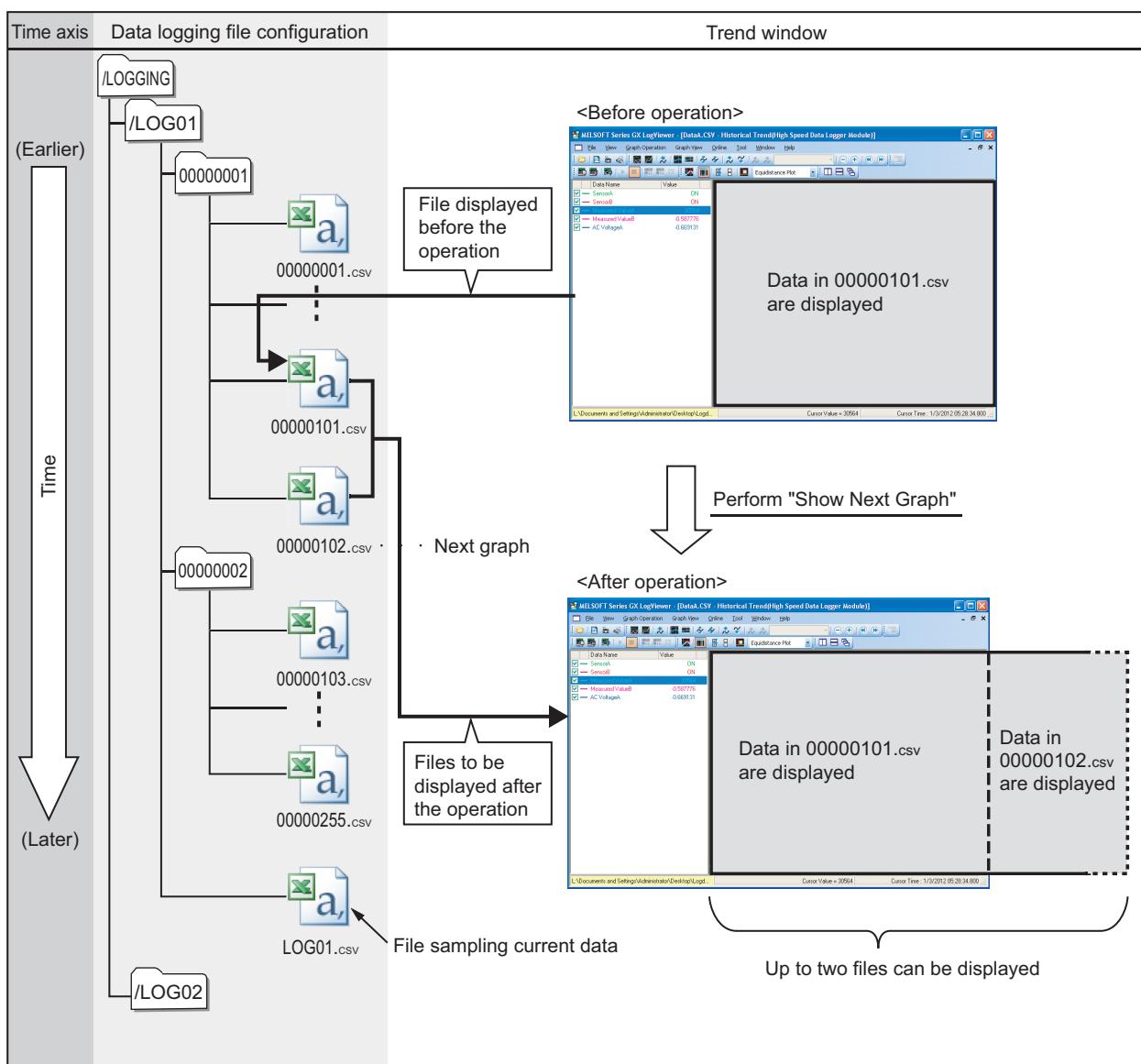
-  [Graph Operation] ⇒ [Show Next Graph] ()
- Click the  button.

Screen display

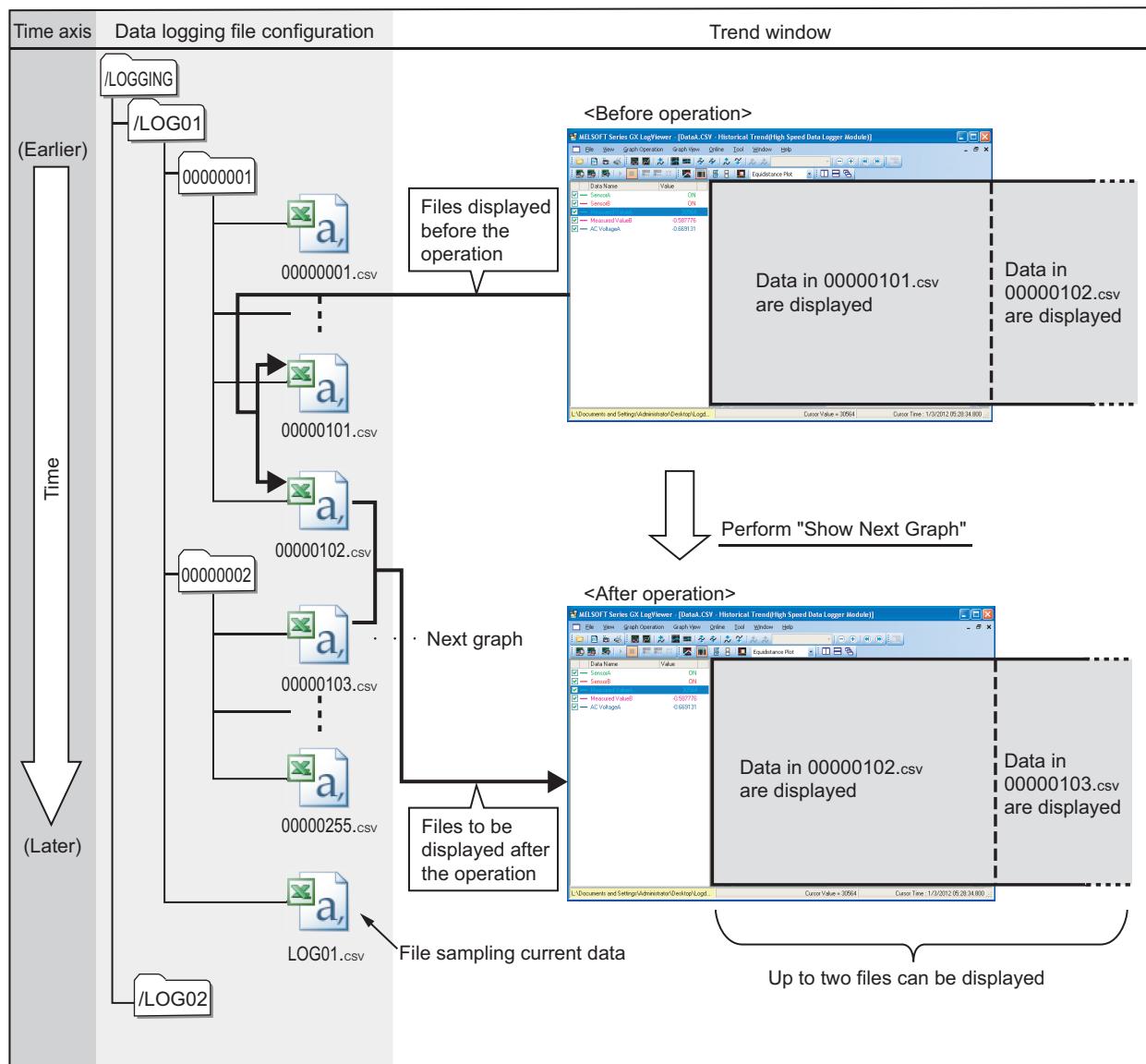
Either of the following two operations is used for displaying data logging files when performing the "Show Next Graph" function.

- Operating from the status when only one data logging file is displayed.
- Operating from the status when the next data logging file is already displayed.

<Operating from the normal status>



<Operating from the status when the next graph is already displayed>



Point

The "Show Next Graph" function cannot be performed to a data logging file (a file that is sampling the current data) whose serial number is not assigned.

9.6 Changing Display Items in Graph Area

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

This section explains the method for changing display items in the graph area.

Data on trend graphs can easily be checked by changing the display items.

- Multiple cursor (☞ Page 134, Section 9.6.1)
- Cursor labels (☞ Page 135, Section 9.6.2)
- Data names (☞ Page 135, Section 9.6.3)
- Plot format (☞ Page 136, Section 9.6.4)
- Time scale labels (☞ Page 137, Section 9.6.5)
- Languages (☞ Page 137, Section 9.6.6)

Point

- The information of the displayed items in the graph area.(Except for Languages.)
Graph display information can be named and registered to be reflected to other windows.
☞ Page 144, Section 9.8 Registering and Reflecting Graphical Display Settings of Trend Windows
Graph display can be set to be reflected automatically when open the same data logging setting window next time.
☞ Page 148, Section 9.9 Reflecting a Graph Display Automatically When Opening a File

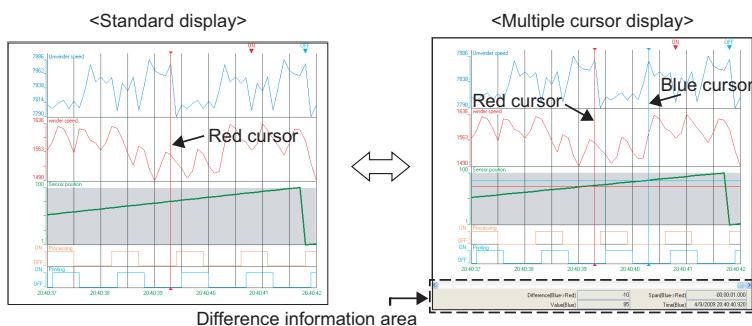
9.6.1 Displaying multiple cursor

This function switches the number of cursors displayed on the graph area.

Only the red cursor is displayed for a standard display, and the red cursor and blue cursor are displayed for the multiple cursor function.

When the multiple cursor function is activated, the difference information area is displayed.

Screen display



Operating procedure

- ☞ [Graph View] ⇒ [Multiple Cursor] (☞)
- Right-click on the graph legend area, and select [Multiple Cursor].
- Right-click on the graph area, and select [Multiple Cursor].

For details of the cursor operation, refer to the following section.

☞ Page 106, Section 9.4.1 (1) Moving cursors

Point

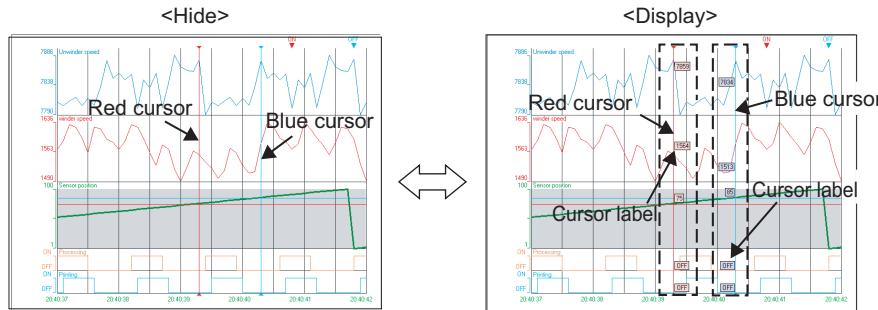
When activating the multiple cursor function, stop or pause the monitoring.

9.6.2 Displaying cursor labels

This function displays or hides cursor labels in the graph area.

Labels for the red cursor are displayed at the right of the cursor, and labels for the blue cursor are displayed at the left of the cursor.

Screen display



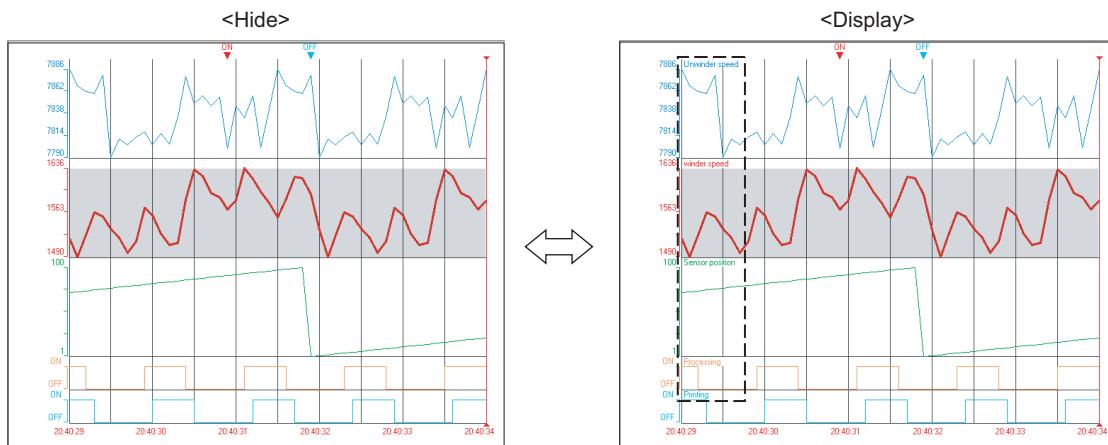
Operating procedure

- [Graph View] \Rightarrow [Cursor Label] ()
- Right-click on the graph legend area, and select [Cursor Label].
- Right-click on the graph area, and select [Cursor Label].

9.6.3 Displaying data names

This function displays or hides data names in the graph area.

Screen display



Operating procedure

- [Graph View] \Rightarrow [Data Name]

9.6.4 Switching graph plot format

Switch the graph plot format displayed on the historical trend window to equidistance plot format or time interval plot format.

Equidistance plot format is the format which displays the sampled data in an equal interval regardless of time.

Time interval plot format is the format which displays the graph in a fixed time interval.

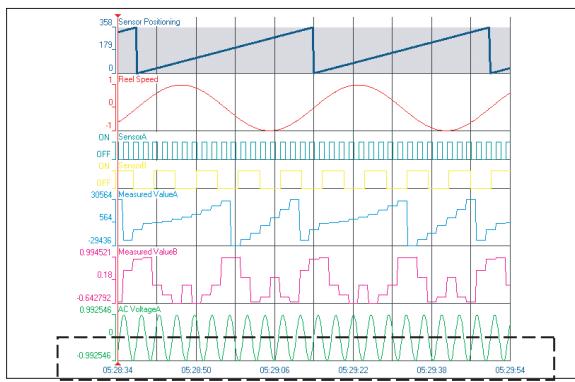
When displaying multiple file logging data on the same graph area, the graph plot format is changed to time interval plot format. Displaying data with fixed time interval allows easier comparison between multiple data.

For operation adding logging data, refer to the following section.

☞ Page 108, Section 9.4.2 Adding/deleting data to/from graph legend area

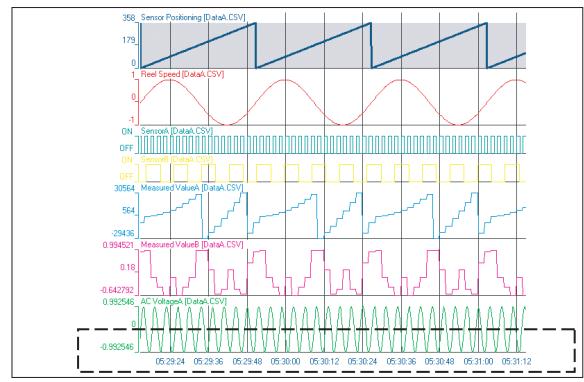
Screen display

<Equidistance plot format>



Display the graph in an equal interval regardless of time.

<Time interval plot format>



Display the graph in a fixed time interval.



Operating procedure

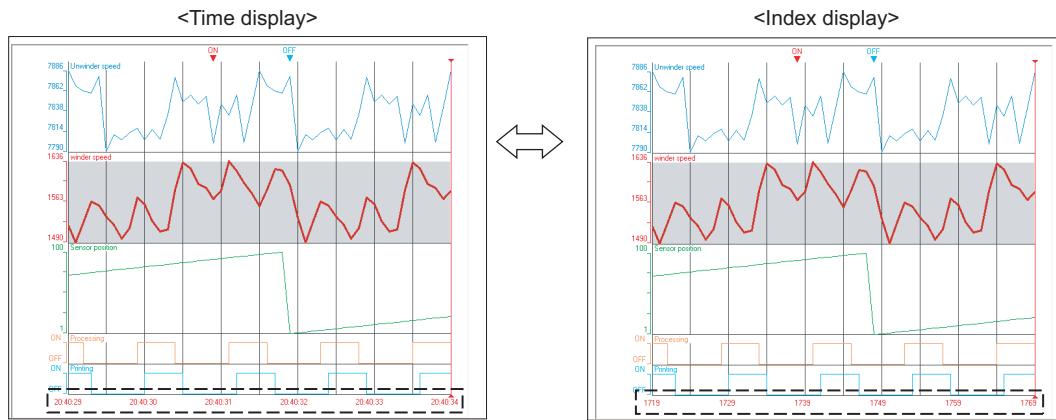
-  [Graph View] ⇒ [Plot Format] ⇒ [Equidistance Plot] / [Time Interval Plot]
- Select [Equidistance Plot] / [Time Interval Plot] from the tool bar.

9.6.5 Changing display of time scale labels

This function switches the display of time scale labels on the graph area between time display, date display, date and time display, and index display.

Q/L Series Analog Module does not have time information in the logging data, therefore only index display can be displayed.

Screen display



Operating procedure

☞ [Graph View] ⇒ [Time Label] ⇒ [Time] / [Date] / [Date and Time] / [Index]

Point

The logging files, in which any of 'year', 'month', 'day', 'hour', 'minute', 'second' of the data line output format (which can be set by the configuration tool) is missing, are displayed as the index display only. However, in case the time information such as "hour", "minute", or "second" is missing, the missing data may be regarded as "0" and displayed Time/Date/Date and Time.

9.6.6 Switching languages

This function switches a language of data names displayed on a historical trend window.

In Historical trend, data names are displayed in a language used in the read data logging file. If characters of codes which can be used in multiple languages or characters of inapplicable languages are used for data names, those characters may be corrupted.

If characters are corrupted, change the language.

Operating procedure

☞ [Graph View] ⇒ [Set Language] ⇒ [Chinese Simplified]
 / [Chinese Traditional]
 / [English]
 / [Japanese]
 / [Korean]
 / [Unicode (UTF-8)]

9.7 Changing Graph Appearance

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

This section explains the method for changing the graph appearance.

- Changing color and line type of graph (☞ Page 138, Section 9.7.1)
- Highlighting graph (☞ Page 143, Section 9.7.2)
- Thickening graph line (☞ Page 143, Section 9.7.3)

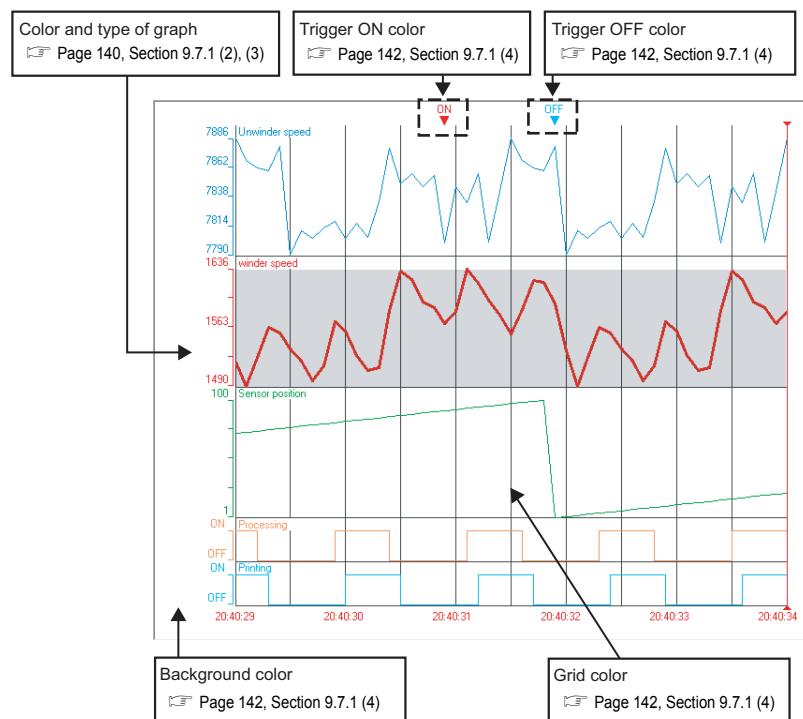
Point

- The graph color (except for background color and grid color), line type, highlight display, and bold lines. Graph display information can be named and registered to be reflected to other windows.
☞ Page 144, Section 9.8 Registering and Reflecting Graphical Display Settings of Trend Windows
Graph display can be set to be reflected automatically when open the same data logging setting window next time.
☞ Page 148, Section 9.9 Reflecting a Graph Display Automatically When Opening a File

9.7.1 Changing color and type of graph

The settings of graphs (color, type), background color, and graph area (grid color, trigger ON color, trigger OFF color) displayed on the trend window can be changed.

The following figure shows the settings that can be changed. The settings are changed on the Graph Properties screen.



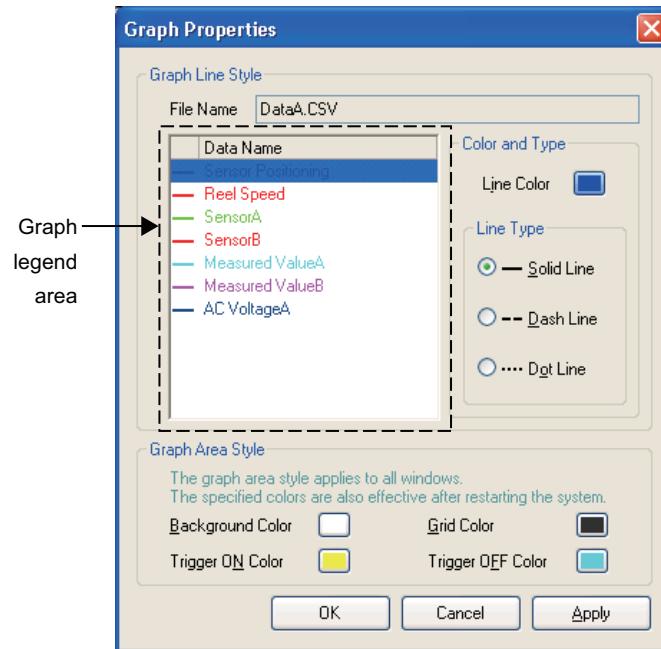
Remark

- Color and type of graph can be specified per data.
- Since the settings of background color, grid color, trigger ON color and trigger OFF color are common to all trend graphs, changes are reflected to all the event windows being displayed.

(1) Displaying Graph Properties screen

Screen display

-  [Graph View] ⇒ [Graph Properties]
- Right-click on the graph legend area, and select [Graph Properties].
- Right-click on the graph area, and select [Graph Properties].

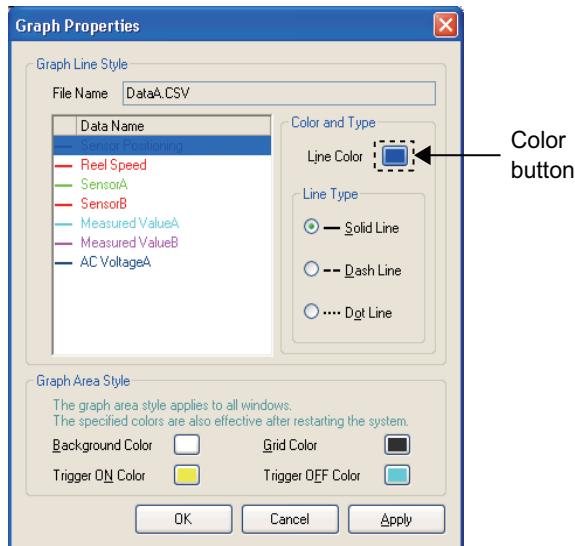


Display contents

Item	Description
Graph Line Style	-
Graph legends	-
Line Type	Displays graph line types of each data.
Data Name	Displays names of each data.
Color and Type	-
Line Color	Specify the graph line color of the selected data in the graph legend area.
Line Type	Specify the graph line type of the selected data in the graph legend area.
Graph Area Style	-
Background Color	Specify the background color of the graph legend area and graph area on the trend window.
Grid Color	Specify the grid color in the graph area.
Trigger ON Color	Specify a color for "ON" displayed in the graph area when a trigger is occurred.
Trigger OFF Color	Specify a color for "OFF" displayed in the graph area when a trigger is cancelled.
OK button	Fixes the settings and closes the screen.
Cancel button	Cancels the settings and closes the screen.
Apply button	Applies the settings to the graphs. (The screen is not closed.)

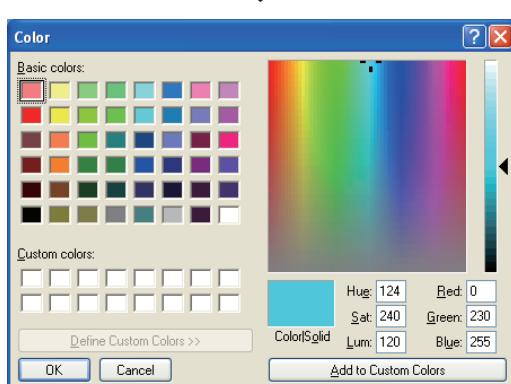
(2) Changing graph line color

Operating procedure



1. Select the data whose graph color to be changed from the list of graph legends.

2. Click the color button of "Line Color".



3. Select a color from "Basic colors" or "Custom colors" on the Color screen, and click the button.

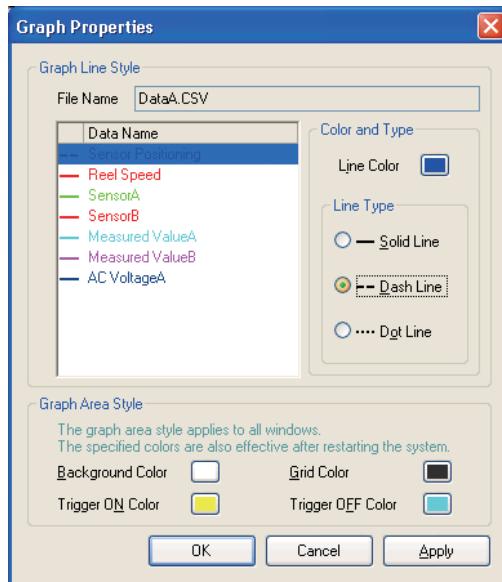
4. Click the button or the button on the Graph Properties screen.

Remark

"Custom colors" can be used by the Event Properties and the Graphic Properties in common.

(3) Changing graph line type

Operating procedure

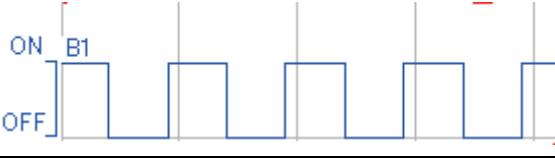


1. Select the data whose graph line type to be changed from the list of graph legends.

2. Select a type from "Line Type".

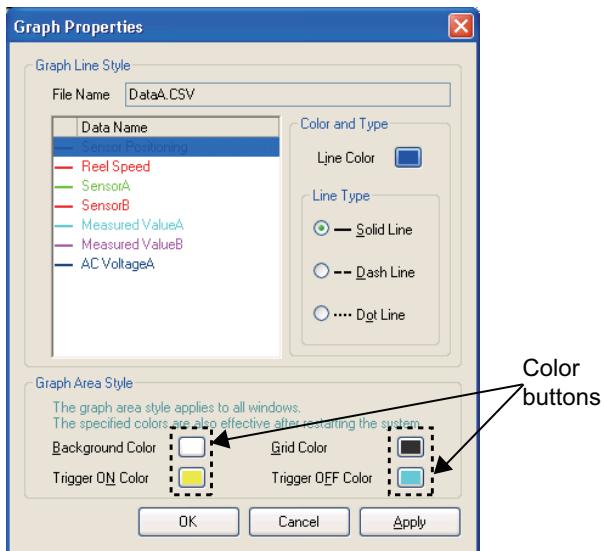
3. Click the **OK** button or the **Apply** button.

The following table shows the example of graph line types.

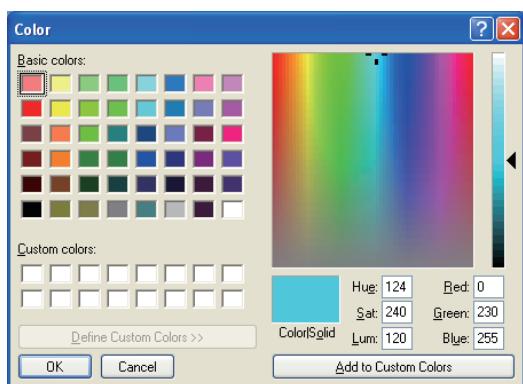
Line type	Example
Solid Line	
Dash Line	
Dot Line	

(4) Changing Graph Area Style (Background Color, Grid Color, Trigger ON Color, and Trigger OFF Color)

Operating procedure



1. Click the color button for the setting to be changed.



2. Select a color from "Basic colors" or "Custom colors" on the Color screen, and click the button.

3. Click the button or the button on the Graph Properties screen.

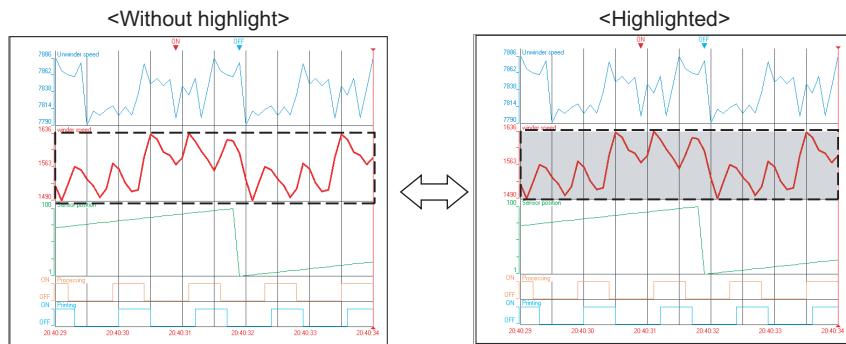
Remark

"Custom colors" can be used by the Event Properties and the Graphic Properties in common.

9.7.2 Highlighting graph

This function highlights the display area of the selected trend graph. The highlighted display is also reflected to a graph printed on paper.

Screen display



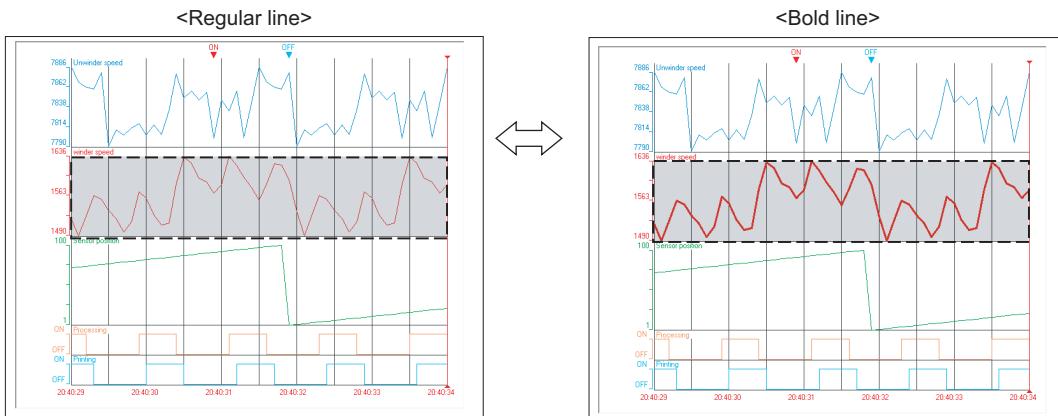
Operating procedure

mouse [Graph View] \Rightarrow [Graph Highlight]

9.7.3 Thickening graph line

This function thickens the line of the selected trend graph.

Screen display



Operating procedure

mouse [Graph View] \Rightarrow [Bold Line]

9.8 Registering and Reflecting Graphical Display Settings of Trend Windows

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

By registering 'graphical display settings' (graph line color/type, upper/lower limit display value, display items in graph area^{*1}, highlighted display, bold line, display status of graph legend area) of trend windows being displayed and naming the setting data as a user setting, they can be reflected to other trend windows.

*1 : Excluding the setting of the [Set Language] function.

For the target items of 'graphical display settings', refer to the Point in the following sections.

☞ Page 111, Section 9.5 Adjusting Trend Graphs

☞ Page 134, Section 9.6 Changing Display Items in Graph Area

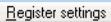
☞ Page 138, Section 9.7 Changing Graph Appearance

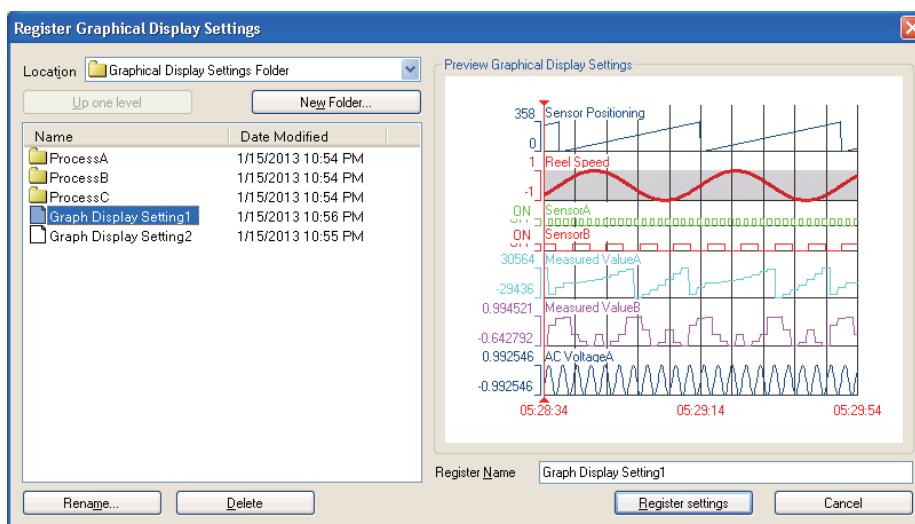
This section explains the following operations related to 'graphical display settings' of trend windows.

- Registering 'graphical display settings' of trend window
- Reflecting registered 'graphical display settings' to another window
- Deleting or renaming registered 'graphical display settings'
- Importing/exporting 'graphical display settings'

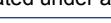
(1) Registering 'graphical display settings' of trend window

Operating procedure

1. Select a trend window whose 'graphical display settings' are to be registered. (Activate it.)
2.  [Graph View] ⇒ [Register Graphical Display Settings]
3. On the Register Graphical Display Settings screen, enter "Register Name" and click the  button.



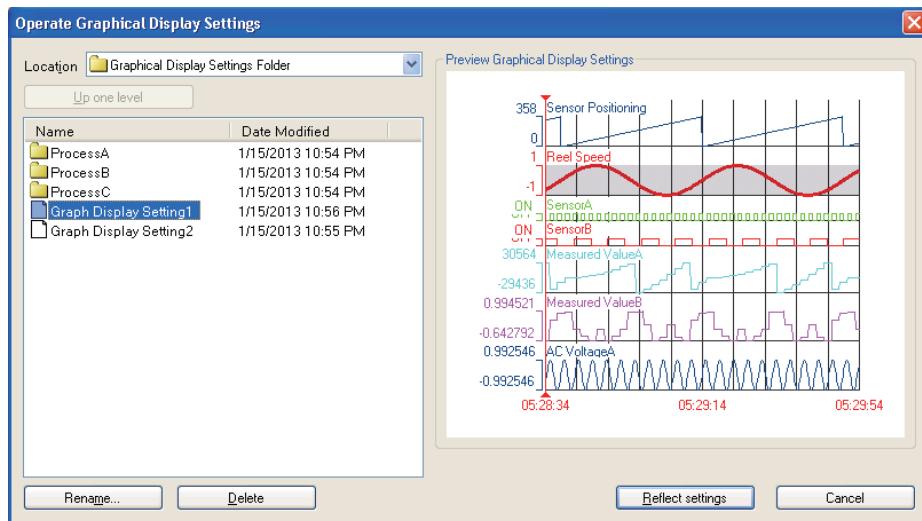
Remark

A new folder can be created under a folder being selected on the Register Graphical Display Settings screen. Select a folder name and click the  button.

(2) Reflecting registered 'graphical display settings' to another trend window

Operating procedure

1. Select a trend window to which settings are to be reflected. (Activate it.)
2.  [Graph View] \Rightarrow [Operate Graphical Display Settings]
3. On the Operate Graphical Display Settings screen, select a display setting to be reflected, and click the  button.



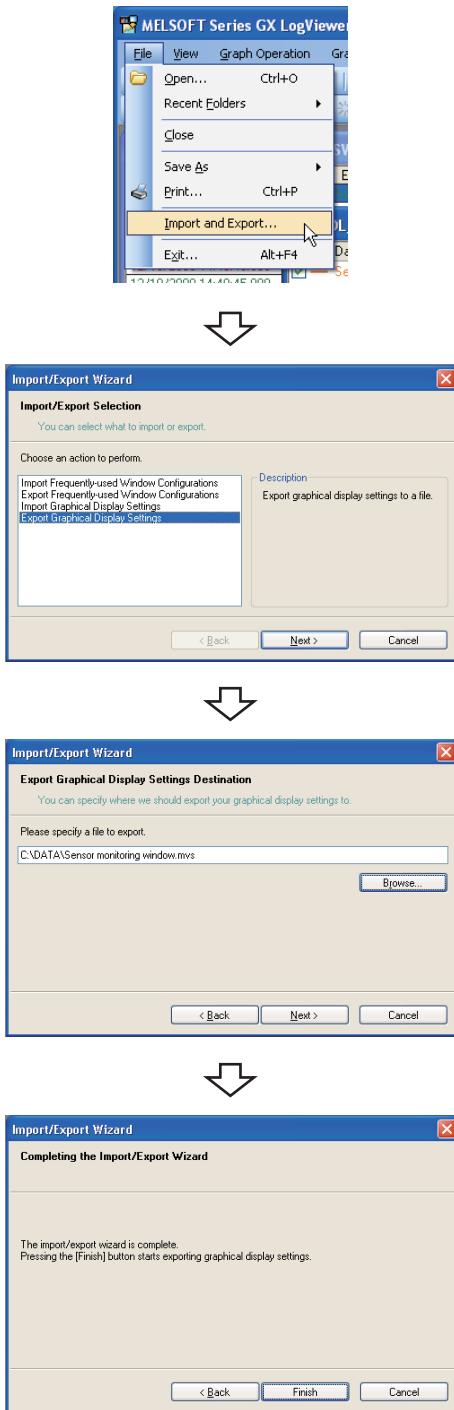
(3) Deleting or renaming registered 'graphical display settings'

Operating procedure

1.  [Graph View] \Rightarrow [Operate Graphical Display Settings]
2. On the Operate Graphical Display Settings screen, select a desired "Graphical Display Setting" and click the  button or the  button.

(4) Exporting 'graphical display settings' to the file

Operating procedure



1. [File] \Rightarrow [Import and Export]

2. Select [Export Graphical Display Settings].

3. Click the button.

4. Specify a destination directory path and file name to save export data.

(An extension '.mvs' is added automatically.)

5. Click the button.

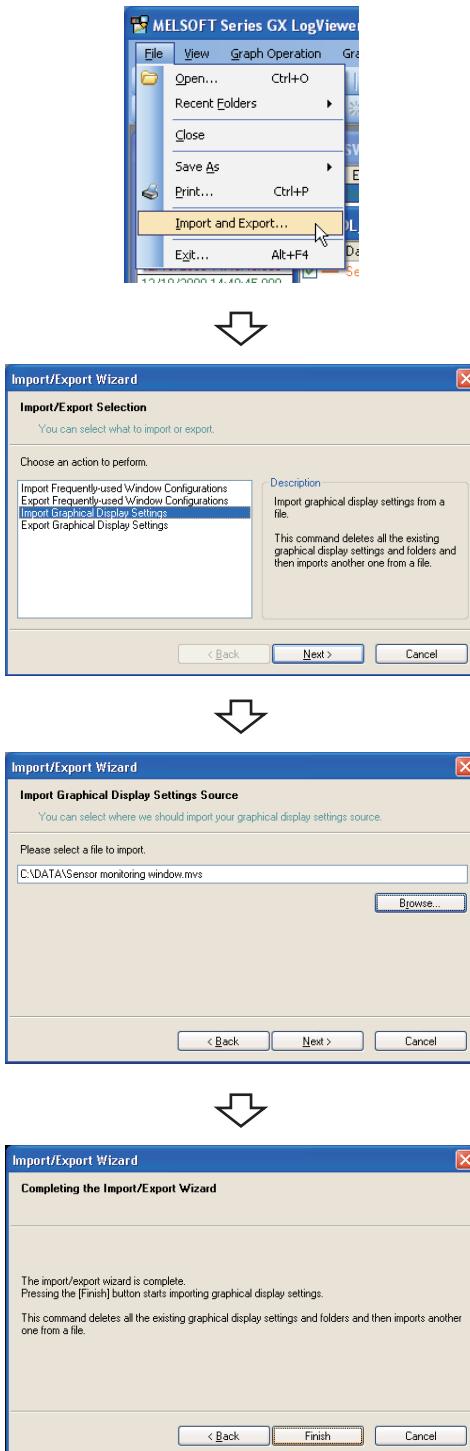
6. Click the button.

Remark

The folder hierarchy information is also saved in an export file.

(5) Importing 'graphical display settings' file

Operating procedure



Remark

- All information included in an export file is imported.
- The import operation discards a current window setting, and then imports a file.

9.9 Reflecting a Graph Display Automatically When Opening a File

QnUDVCPU **High Speed Data Logger** **High Speed Data Communication** **Q Analog** **LCPU** **L Analog**

By storing 'graphical display settings' (graph line color/type, upper/lower limit display value, display items in graph area^{*1}, highlighted display, bold line, display status of graph legend area) being displayed per data logging setting, they can be reflected to the graph automatically when opening the trend window next time.

Using this function saves time to set the same data logging settings every time when displaying the same graph as previously displayed.

*1 : Excluding the setting of the [Set Language] function.

For the target items of the auto reflect function, refer to the Point in the following sections.

☞ Page 111, Section 9.5 Adjusting Trend Graphs

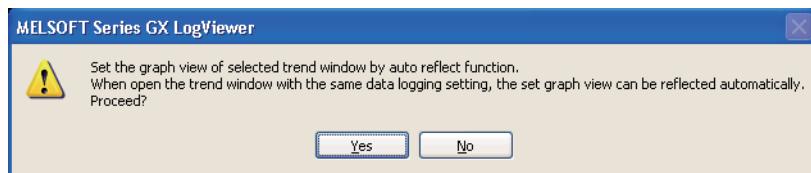
☞ Page 134, Section 9.6 Changing Display Items in Graph Area

☞ Page 138, Section 9.7 Changing Graph Appearance

Operating procedure

1.  [Graph View]⇒[Set Graph View by the Auto Reflect Function]

2. Click the  button.



→ When opening the trend graph of the same data logging setting, the graph display is reflected automatically.

Point

When initializing the settings, initialize the graph display first, then set the auto reflect function again.

9.10 Initializing Graph Display

QnUDVCPU **High Speed Data Logger** **High Speed Data Communication** **Q Analog** **LCPU** **L Analog**

This section explains the method for initializing the changed graph display. (Graph color, etc.)

Operating procedure

1. Select a trend window to be initialized. (Activate it.)

2.  [Graph View]⇒[Initialize Graph View]

Point

In case the auto reflect function has already been set, even if the graph is initialized, the graph is displayed obeying the setting in automatic reflection function when opening the trend window of the same data logging setting next time.

9.11 Graph Display for Missing Data or Time Reversed Data



This section explains the graph display when the data is missing, or the time information is reversed.

1) Graph display for missing data

When displaying the graph with equidistance plot format, the missing data is displayed as two vertical dashed-dotted lines, and the time scale label is displayed as "****".

When displaying the graph with time interval plot format, the missing data is displayed as two vertical dashed-dotted lines, and the missing period is displayed as gray.

For details of missing data, refer to the following manuals.

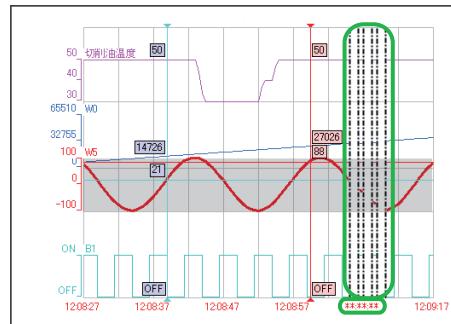
■ MELSEC-L CPU Module User's Manual (Data Logging Function)

■ High Speed Data Logger Module User's Manual

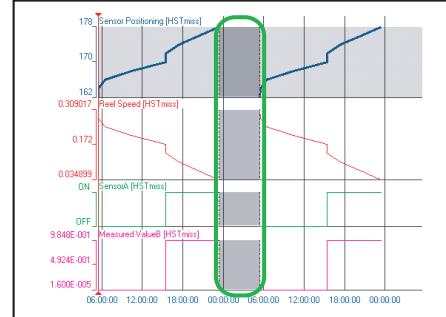
■ High Speed Data Communication Module User's Manual

Screen display

<When displaying with equidistance plot format>



<When displaying with time interval plot format>



(a) Displaying values/status of graph legends for missing data

When the cursor is placed between the two dashed-dotted lines for missing data, "---" are displayed for the values/status of graph legends.

	Data Name	Value
<input checked="" type="checkbox"/>	Unwinder speed	---
<input checked="" type="checkbox"/>	Winder speed	---
<input checked="" type="checkbox"/>	Sensor position	---
<input checked="" type="checkbox"/>	Processing	---
<input checked="" type="checkbox"/>	Printing	---

(b) Displaying cursor value and difference information for missing data

When the cursor is placed between the two dashed-dotted lines for missing data, the cursor value and the cursor time on the status bar are displayed as follows.

- Cursor Value: "---
- Cursor Time : "X/X/XXXX XX.XX.XX XXX"

Cursor Value = --- Cursor Time : /*

For the multiple cursor display, when the red cursor or blue cursor is placed at the missing data area, the difference and span in the difference information area are displayed as follows.

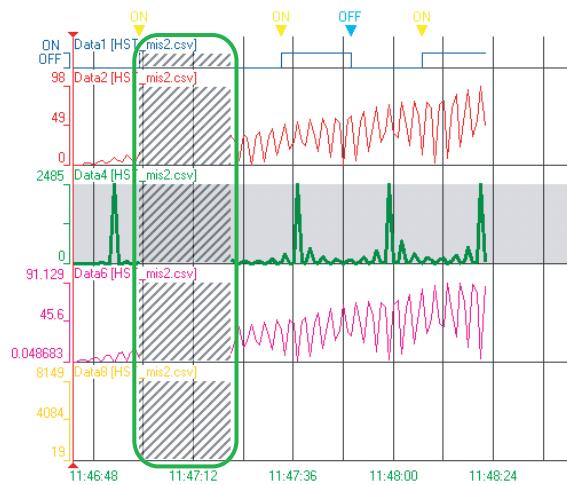
- Difference: "---
- Span: "XX.XX.XX XXX, XXX" (For LCPU)
- "XX.XX.XX XXX" (For High Speed Data Logger Module)

Difference(Blue->Red)	---
Value(Blue)	---

Span(Blue->Red)	XX, XX, XX XXX XXX
Time(Blue)	/*

(2) Graph display for reversed data

When displaying the graph with time interval plot format, the reversed period is displayed as oblique stripe, in case data time is reversed owing to the change of the programmable controller CPU time.



9.12 Displaying Abnormal Graphs



An abnormal graph is displayed when the value of data is a nonnumeric or infinite value.

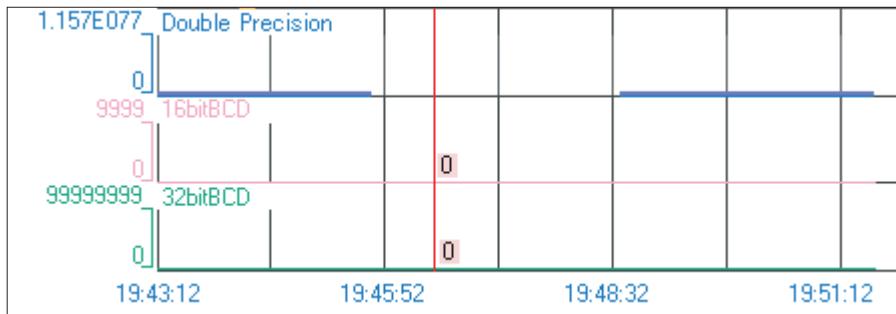
When a float (single precision, double precision) is expressed as a numeric value, a bit string that is not recognized as a numeric value is handled as a nonnumeric value.

By the scaling function of High Speed Data Logger Module/High Speed Data Communication Module, values of data may become plus infinite/minus infinite values.

The following explains the display of nonnumeric and infinite values on the trend window.

(1) Graph display on the trend window

- The graph is not displayed while nonnumeric values continues.
- The cursor labels of the graph are not displayed while nonnumeric values continues.
- For the plus infinite value, the graph attaches to the upper limit display value.
- For the minus infinite value, the graph attaches to the lower limit display value.



(2) Cursor values of graph legends

Values of graph legends are displayed as follows.

- Nonnumeric value: "NaN"
- Plus infinite value: "Inf"
- Minus infinite value: "-Inf"

<input checked="" type="checkbox"/>	Double Precision	NaN
<input checked="" type="checkbox"/>	16bitBCD	0
<input checked="" type="checkbox"/>	32bitBCD	0

(3) Cursor value and difference information displayed on the status bar of the trend window

Cursor Value on the status bar, and Difference (Blue → Red), Value (Blue) in the difference information area are also displayed as follows.

- Nonnumeric value: "NaN"
- Plus infinite value: "Inf"
- Minus infinite value: "-Inf"

Difference(Blue->Red)	NaN
Value(Blue)	2.160E043
Cursor Value =	NaN

9.13 Handling BCD Type Incorrect Values



When the values of 16 bit BCD type integer and 32 bit BCD type integer exceed the maximum value, they are handled as incorrect values.

The following explains the expression of incorrect values on the trend window.

(1) Graph display on the trend window

- The graph is not displayed while incorrect values continues.
- The cursor labels of the graph is not displayed while incorrect values continues.
- For the multiple cursor display, the horizontal cursor that indicates the intersection with the graph is not displayed.



(2) Cursor values of graph legends

When the cursor is placed at the plot of incorrect values, "----" are displayed for values of graph legends.



(3) Cursor value and difference information displayed on the status bar of the trend window

When the cursor is placed at the plot of incorrect values, "----" are displayed for the cursor value on the status bar and for the cursor value of the blue cursor for the multiple cursor display.

"----" is also displayed for the Difference when the red cursor or the blue cursor is placed at the incorrect value.



CHAPTER 10 USING EVENT MONITORING FUNCTION

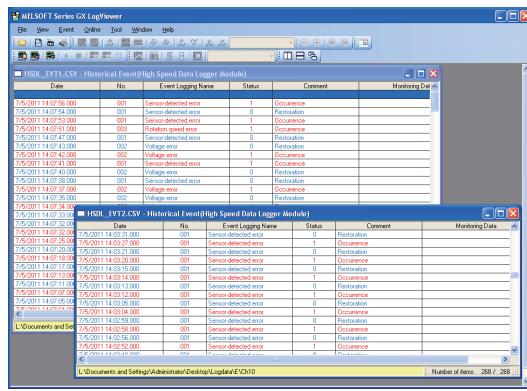


10.1 Overview

This function displays the events which are sampled by the event logging function of High Speed Data Logger Module in the view format.

The following two types of display method are available in the event monitoring.

- Historical event
- Realtime event

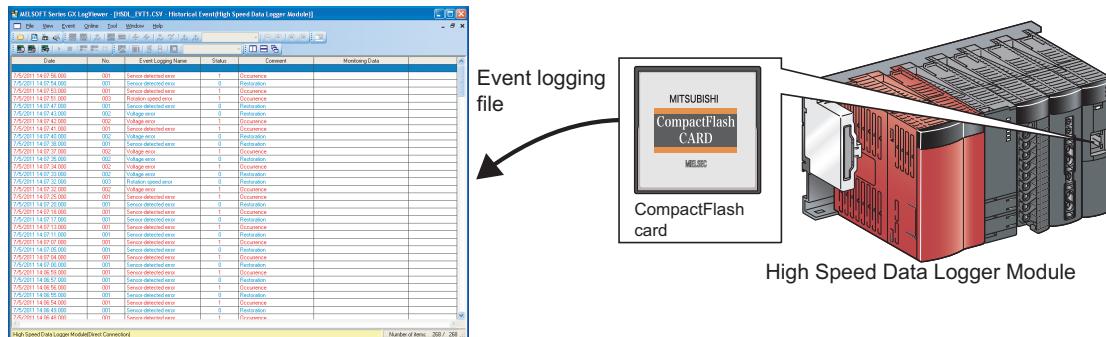


(1) Historical event

Event logging files stored in the CompactFlash card on the High Speed Data Logger Module are displayed.

Stored past events can be confirmed anytime.

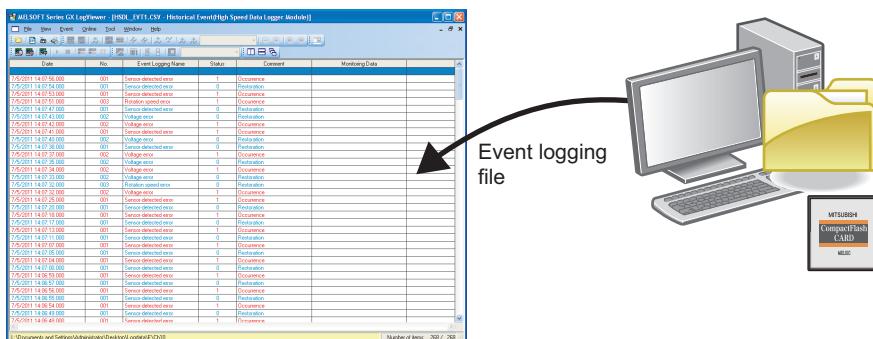
(a) Displaying data sampled by High Speed Data Logger Module



For the operation method, refer to the following section.

☞ Page 159, Section 10.3.1 (1) Displaying logging files saved with event logging function of High Speed Data Logger Module

(b) Displaying data stored in a personal computer, or in a memory medium connected to a personal computer



For the operation method, refer to the following section.

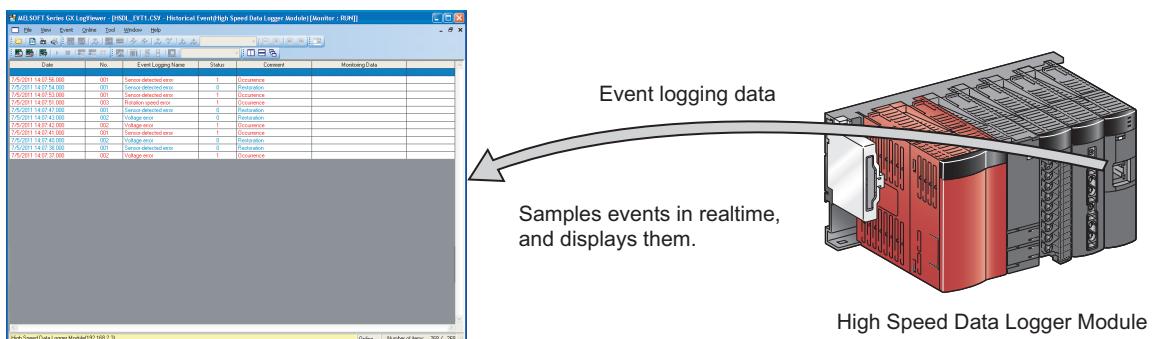
☞ Page 160, Section 10.3.1 (2) Displaying event logging files stored in a personal computer or in a memory medium connected to a personal computer

(2) Realtime event

The most recent events sampled by the High Speed Data Logger Module are displayed.

They are always kept updated so that the event history from the start of monitoring to current time can be confirmed.

To display Realtime event, a personal computer and a High Speed Data Logger Module need to be connected to each other online.



For details of realtime event display operation, refer to the following section.

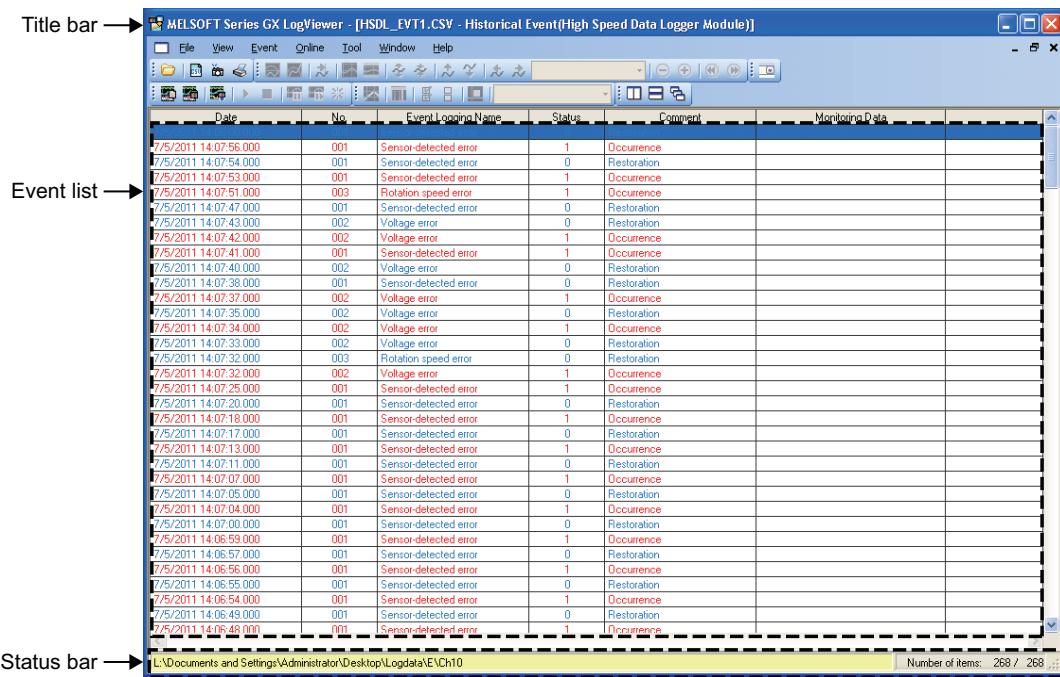
☞ Page 161, Section 10.3.2 Displaying current events (Realtime event)

10.2 Screen Configuration

This section explains the screen configuration of event windows.

10.2.1 Event window

Screen display



Item	Description	Reference
Title bar	Displays the following data. • For Historical event Logging file names - historical event (module name) • For Realtime event Logging setting name - realtime event (module name) [monitoring status]	-
Event list	Displays a list of occurred events.	Page 156, Section 10.2.2
Status bar	Displays a source path from which an event logging file is obtained and the communication status with a High Speed Data Logger Module.	Page 157, Section 10.2.3

Remark

A maximum number of realtime event data to be displayed is 2000.

10.2.2 Event list

Screen display

①	②	③	④	⑤	⑥	⑦
Date	No.	Event Logging Name	Status	Comment	Monitoring Data	
7/6/2011 12:28:55.000	001	Sensor-detected error	1	Occurrence	D2005=4.49473684210526	
7/6/2011 12:28:54.000	003	Rotation speed error	1	Occurrence	D2003=31.68	
7/6/2011 12:28:50.000	001	Sensor-detected error	0	Restoration	D2005=4.09473684210526	
7/6/2011 12:28:50.000	003	Rotation speed error	0	Restoration	D2003=23.6	
7/6/2011 12:28:49.000	001	Sensor-detected error	1	Occurrence	D2005=3.68421052631579	
7/6/2011 12:28:49.000	003	Rotation speed error	1	Occurrence	D2003=31.44	
7/6/2011 12:28:47.000	001	Sensor-detected error	0	Restoration	D2005=5.14736842105263	
7/6/2011 12:28:47.000	002	Voltage error	0	Restoration	D2007=77.88	
7/6/2011 12:28:46.000	002	Voltage error	1	Occurrence	D2007=80.13	

Item	Description	Reference
① Date	Displays date and time of an event occurrence.	-
② No.	Displays the event number.	-
③ Event Logging Name	Displays a name of an event logging setting.	-
④ Status	Displays Occurrence/Restoration using the following values. 1: Occurrence 0: Restoration	-
⑤ Comment	Displays an occurrence comment or restoration comment.	-
⑥ Monitoring Data	Displays a name and value of monitoring data in the following format. (Event logging name)=(Event value); (Event logging name)=(Event value); ... (Event logging name)=(Event value)	-
⑦ Filter row	Specify a filtering condition.	Page 163, Section 10.4.1

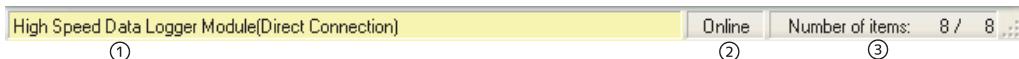
10.2.3 Status bar

Screen display

< For Historical event >



< For Realtime event >



Item	Description				
① Acquisition destination of event logging file	<p>Displays the acquisition destination and the logging file type of the data logging file being displayed with characters and color.</p> <p>Displayed characters</p> <p><For Historical event></p> <p>Displays the execution status during sorting/filtering execution.</p> <ul style="list-style-type: none"> When connecting to a High Speed Data Logger Module High Speed Data Logger Module (IP address or direct connection):/File path When the save destination is a memory medium in a personal computer or a memory medium connected to a personal computer File path <p><For Realtime event></p> <p>Displays an IP address of a High Speed Data Logger Module communicating with, or "Direct Connection".</p>				
② Communication status	Background color				
③ Number of items	<table border="1"> <tr> <th>Logging file type</th> <th>Background color</th> </tr> <tr> <td>High Speed Data Logger Module</td> <td>Light yellow</td> </tr> </table>	Logging file type	Background color	High Speed Data Logger Module	Light yellow
Logging file type	Background color				
High Speed Data Logger Module	Light yellow				
② Communication status	Displays 'Online' or 'Offline'. (For Realtime event only)				
③ Number of items	Displays the number of events displayed in an event list using the following format. Number of items: (Number of items being displayed) / (Total number of items)				

10.3 Displaying Event List

This section explains the following operations for displaying events sampled by High Speed Data Logger Module in the event list.

- Displaying logged events (Historical event) (☞ Page 158, Section 10.3.1)
- Displaying current events (Realtime event) (☞ Page 161, Section 10.3.2)
- Operating realtime event monitoring status (☞ Page 162, Section 10.3.3)

10.3.1 Displaying logged events (Historical event)

With Historical event, the following files stored in a module or a memory medium are specified, and displayed on the event list.

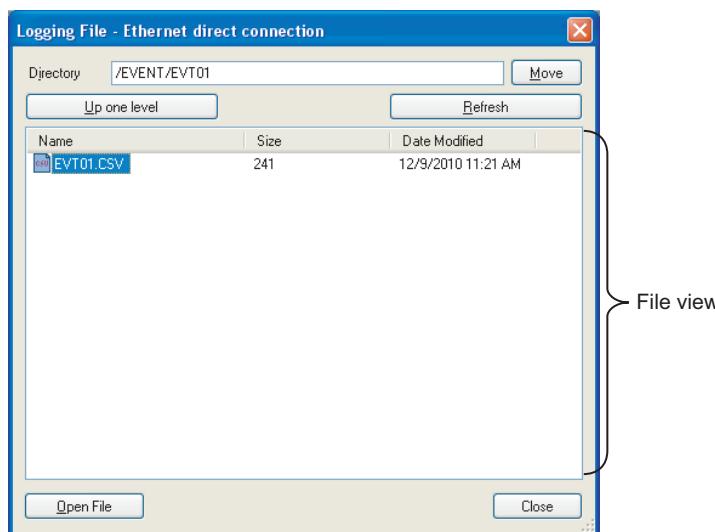
- Logging files stored in a CompactFlash card with the event logging function of High Speed data Logger Module
- Event logging files stored in a personal computer or in a memory medium connected to a personal computer

(1) Displaying logging files saved with event logging function of High Speed Data Logger Module

Event logging files stored in a CompactFlash card with the event logging function of High Speed Data Logger Module are displayed with Historical event.

Screen display

1.  [Online] ⇒ [Open Logging File] ()
2. Select "High Speed Data Logger Module" on the Connection Destination screen.
3. Specify a High Speed Data Logger Module to be connected with on the Transfer Setup screen.
4. Cancel the access restriction on the Access Authentication screen. (Only when the access restriction is set.)



Operating procedure

1. Select a event logging file (***.CSV or ***.BIN) in the file view. (Multiple files cannot be selected.)

Item	Description
Directory	Displays a path of the directory being displayed in the file view. Or, specify the directory.
 button	Moves to the specified directory.
 button	Moves up to the directory one layer above.
 button	Updates the contents displayed in the file view.
File view	Displays a list of folders and files in the path specified for "Directory".

2. Click the  button.

→ The selected event logging file is displayed as a event list.

Point

For details of the access authentication, refer to the following manual.
 High Speed Data Logger Module User's Manual

(2) Displaying event logging files stored in a personal computer or in a memory medium connected to a personal computer

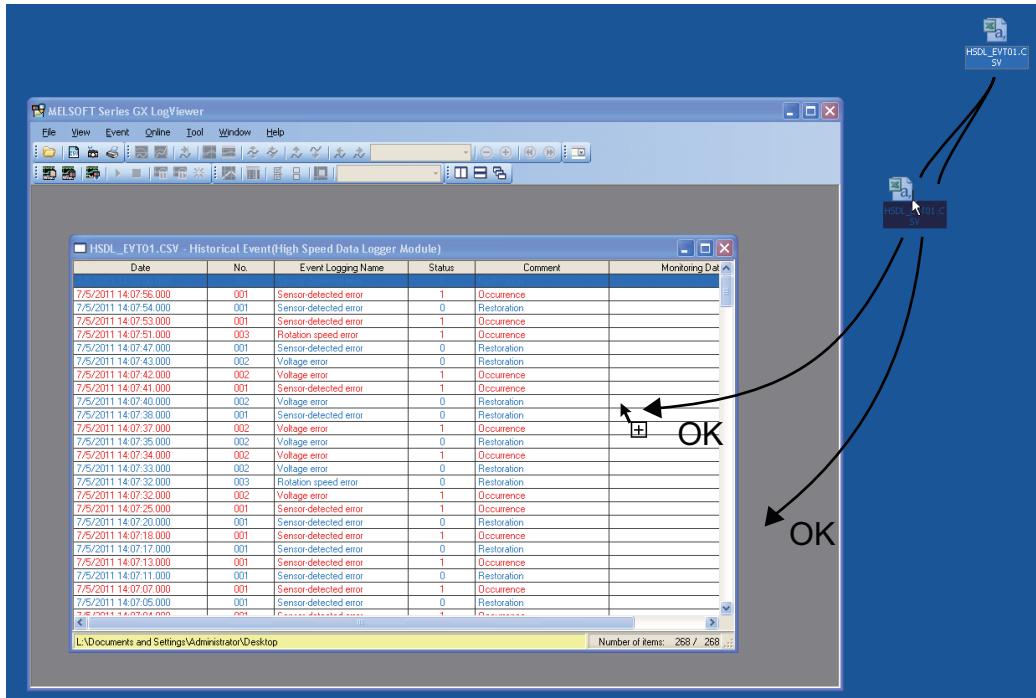
CSV files or binary files stored in a personal computer or a memory medium are displayed with Historical event.

For saving logging files to a personal computer or to a memory medium, refer to the following chapter.

☞ Page 174, CHAPTER 11 SAVING LOGGING FILES TO PERSONAL COMPUTER

Operating procedure

-  **[File] ⇒ [Open] ()**
- **Drag and drop the event logging file to the main widow.**
(Example: Displaying "HSDL_EVT01.CSV" on the desktop)

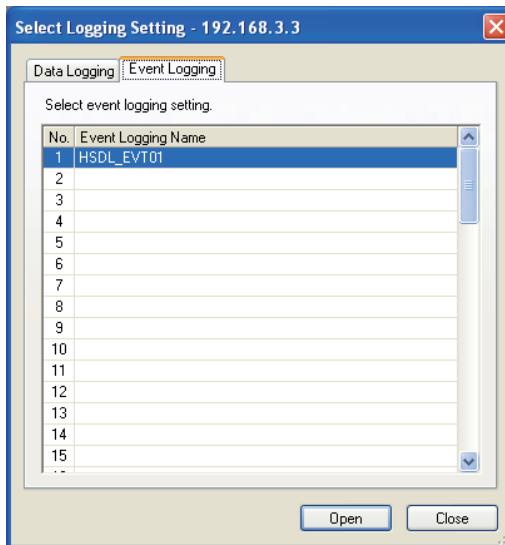


10.3.2 Displaying current events (Realtime event)

With Realtime event, an event logging setting of the module is specified, and events are displayed on the list.

Screen display

1.  [Online] \Rightarrow [Realtime Monitor] ()
2. Specify a High Speed Data Logger Module to be connected with on the Transfer Setup screen.
3. Cancel the access restriction on the Access Authentication screen. (Only when the access restriction is set.)
4. Click the <<Event Logging>> tab.



Operating procedure

1. Select a event logging setting from the list.

Item	Description
<<Event Logging>> tab	Displays the list of event logging settings.
<<Data Logging>> tab	Displays the list of data logging settings.  Page 101, Section 9.3.2
No.	Displays the number of a event logging setting.
Event Logging Name	Displays a name of a event logging setting specified in the High Speed Data Logger Module configuration tool

2. Click the  button.

→ An event list of the selected event logging setting is displayed.

Point

For details of the access authentication, refer to the following manual.

 High Speed Data Logger Module User's Manual

10.3.3 Operating realtime event monitoring status

In Realtime event, the following operations are used to change the monitoring status and control graphs.

- Starting monitoring
- Stopping monitoring

(1) Starting monitoring

This operation starts the communication with a High Speed Data Logger Module and turns the monitoring status from Stop to Run.

Operating procedure

 [Online] \Rightarrow [Begin Monitor] ()

The status of the tool buttons changes as shown below when monitoring.



(2) Stopping monitoring

This operation disconnects the communication with a High Speed Data Logger Module and stops updating the event list.

Operating procedure

 [Online] \Rightarrow [End Monitor] ()

The status of the tool buttons changes as shown below when monitoring is stopped.



10.4 Operating Event List

The following operations are used for arranging an event list display according to the purpose.

- Displaying only events that meet specific conditions (Filtering) (☞ Page 163, Section 10.4.1)
- Sorting events (☞ Page 165, Section 10.4.2)
- Selecting language (☞ Page 166, Section 10.4.3)
- Displaying consecutive previous/next event (☞ Page 166, Section 10.4.4)

10.4.1 Displaying only events that meet specific conditions (Filtering)

Events being displayed in the event list can be limited according to specific conditions (filtering conditions) of each column.

When multiple conditions are specified, only events that meet all conditions are displayed in the event list.

Screen display

Example: Specifying 'QD81DL96 Start' as a condition for the "Event Logging Name" column.

<Before filtering>

Date	No.	Event Logging Name	Status	Comment	Monitoring Data
4/10/2009 06:20:54.300	003	Measurement Error	0	Restoration	D513=7867
4/10/2009 06:20:54.200	001	Process Stop	1	Occurrence	D2005=7896
4/10/2009 06:20:53.800	001	Process Stop	0	Restoration	D2005=303
4/10/2009 06:20:53.700	001	Process Stop	1	Occurrence	D2005=306
4/10/2009 06:20:53.600	001	Process Stop	0	Restoration	D2005=89
4/10/2009 06:20:53.500	001	Process Stop	1	Occurrence	D2005=9
4/10/2009 06:20:53.400	001	Process Stop	0	Restoration	D2005=460
4/10/2009 06:20:53.200	001	Process Stop	1	Occurrence	D2005=453
4/10/2009 06:20:53.100	001	Process Stop	0	Restoration	D2005=94



<After filtering>

Date	No.	Event Logging Name	Status	Comment	Monitoring Data
4/10/2009 06:20:54.300	003	Measurement Error	0	Restoration	D513=7867
4/10/2009 06:20:54.200	003	Measurement Error	1	Occurrence	D513=7896
4/10/2009 06:20:51.900	003	Measurement Error	0	Restoration	D513=7867
4/10/2009 06:20:51.800	003	Measurement Error	1	Occurrence	D513=7896
4/10/2009 06:20:49.400	003	Measurement Error	0	Restoration	D513=7867
4/10/2009 06:20:49.300	003	Measurement Error	1	Occurrence	D513=7896

Operating procedure

1. Perform any of the following operations to display the filter row.

- [Event] ⇒ [Filter] ()
- Right-click on the event list, and select [Filter].

Filter row	Date	No.	Event Logging Name	Status	Comment	Monitoring Data
	4/10/2009 06:20:54.600	001	Process Stop	0	Restoration	D2005=260

2. Set a filtering condition to the filter row. The following are the three setting methods.

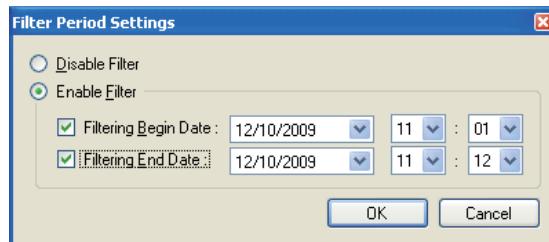
- Filtering by "Date" (☞ Page 164, Section 10.4.1 (2)(a))
- Filtering by other items (☞ Page 164, Section 10.4.1 (2)(b), (c))
- Clearing filtering conditions (☞ Page 164, Section 10.4.1 (2)(d))

(a) Filtering by "Date"

Operating procedure

1. Click the filter row in the "Date" column.
2. Select "Enable Filter".
3. Select "Filtering Begin Date" and "Filtering End Date" on the Filter Period Settings screen.^{*1}
4. Click the  button.

*1 : Without specifying "Filtering Begin Date", all of events older than date and time specified in "Filtering End Date" are displayed. Without specifying "Filtering End Date", all of events newer than date and time specified in "Filtering Begin Date" are displayed.

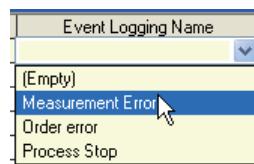


(b) Filtering by an item selected from a list box

Operating procedure

1. Click a cell in the filter row.
2. From the list box, select an item to filter events by.^{*2}

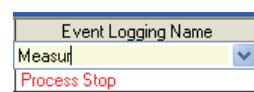
*2 : List box selection is not available in the "Monitoring Data" column.



(c) Filtering by an item input directly

Operating procedure

1. Directly enter a filtering condition in a cell of the filter row.
2. Press the  key.



(d) Clearing filter conditions

Operating procedure

- Select "Disable Filter" on the Filter Period Settings screen.
- Select '(Empty)' in a list box.
- Clear a cell of the filter row.
- Hide the filter row.

Remark

- A new event occurs after filtering is displayed in an event list only if it matches the filter conditions.
- Filtering is executed with not perfect match but partial match of a string specified in a cell of the filter row.

10.4.2 Sorting events

This function sorts events being displayed in the event list in ascending order (▲) or descending order (▼) by the value of each column.

Screen display

Example: Sorting "Event Logging Name" in ascending order (▲)

<Before sorting>

Date	No.	Event Logging Name	Status	Comment	Monitoring Data
4/10/2009 06:20:54.600	001	Process Stop	0	Restoration	D2005=260
4/10/2009 06:20:54.400	003	Measurement Error	0	Restoration	D513=7867
4/10/2009 06:20:54.300	003	Measurement Error	1	Occurrence	D513=7886
4/10/2009 06:20:54.200	001	Process Stop	1	Occurrence	D2005=303
4/10/2009 06:20:53.800	001	Process Stop	0	Restoration	D2005=306
4/10/2009 06:20:53.700	001	Process Stop	1	Occurrence	D2005=89
4/10/2009 06:20:53.600	001	Process Stop	0	Restoration	D2005=8
4/10/2009 06:20:53.500	001	Process Stop	1	Occurrence	D2005=460
4/10/2009 06:20:53.400	001	Process Stop	0	Restoration	D2005=453
4/10/2009 06:20:53.200	001	Process Stop	1	Occurrence	D2005=94
4/10/2009 06:20:53.100	001	Process Stop	0	Restoration	D2005=260



<After sorting>

Date	No.	Event Logging Name	Status	Comment	Monitoring Data
4/10/2009 06:20:49.300	003	Measurement Error	1	Occurrence	D513=7886
4/10/2009 06:20:49.400	003	Measurement Error	0	Restoration	D513=7867
4/10/2009 06:20:51.800	003	Measurement Error	1	Occurrence	D513=7886
4/10/2009 06:20:51.900	003	Measurement Error	0	Restoration	D513=7867
4/10/2009 06:20:54.300	003	Measurement Error	1	Occurrence	D513=7886
4/10/2009 06:20:48.000	002	Order error	0	Restoration	D1200=31360
4/10/2009 06:20:49.700	002	Order error	1	Occurrence	D1200=11776
4/10/2009 06:20:50.600	002	Order error	0	Restoration	D1200=30720
4/10/2009 06:20:52.200	002	Order error	1	Occurrence	D1200=10240
4/10/2009 06:20:53.100	002	Order error	0	Restoration	D1200=32256

Operating procedure

- [Event] ⇒ [Sort by] ⇒ [Date] / [No.] / [Event Logging Name] / [Status] / [Comment] / [Monitoring Data].
- Click the item name displayed on the top of each column.

After sorting events, ▲ (ascending order)/▼ (descending order) is displayed on the right side of the item name.

Date	No.	Event Logging Name	Status	Comment	Monitoring Data
4/10/2009 06:20:48.000	002	Order error	0	Restoration	D1200=31360

Remark

Events which occurred after the sort are inserted to the list in a status maintaining the sorting order.

10.4.3 Switching languages

This function switches a language of event logging names and comments displayed on a historical event window. In Historical event, event logging names and comments are displayed in a language used in the read event logging file. If characters of codes which can be used in multiple languages or characters of inapplicable languages are used for data names, those characters may be corrupted. If characters are corrupted, change the language.

Operating procedure

 [Event] ⇒ [Set Language] ⇒ [Chinese Simplified]
/ [Chinese Traditional]
/ [English]
/ [Japanese]
/ [Korean]
/ [Unicode (UTF-8)]

Point

Filtering needs to be disabled when performing the [Set Language] function. Sorting is reset when the [Set Language] function is performed while data are being sorted.

10.4.4 Displaying consecutive previous/next event

Normally, one event logging file is displayed on a historical event window. However, the previous/next event logging file can be displayed simultaneously by using this function.

This function enables the consecutive view of divided event logging files.

Point

- The previous/next data logging file in CSV or binary format can be displayed.
- The previous/next event logging file may not be displayed if any of the following operations is performed using an event logging file stored in a personal computer.
If the previous/next event logging file cannot be displayed, create the same folder configuration as the one under '/EVENT' in a CompactFlash card before operating.
 - A name of a folder or event logging file under the event logging name has been changed.
 - The previous/next event logging file has been deleted.
 - File names of event logging files are not in series.

(1) Displaying previous events

Operating procedure

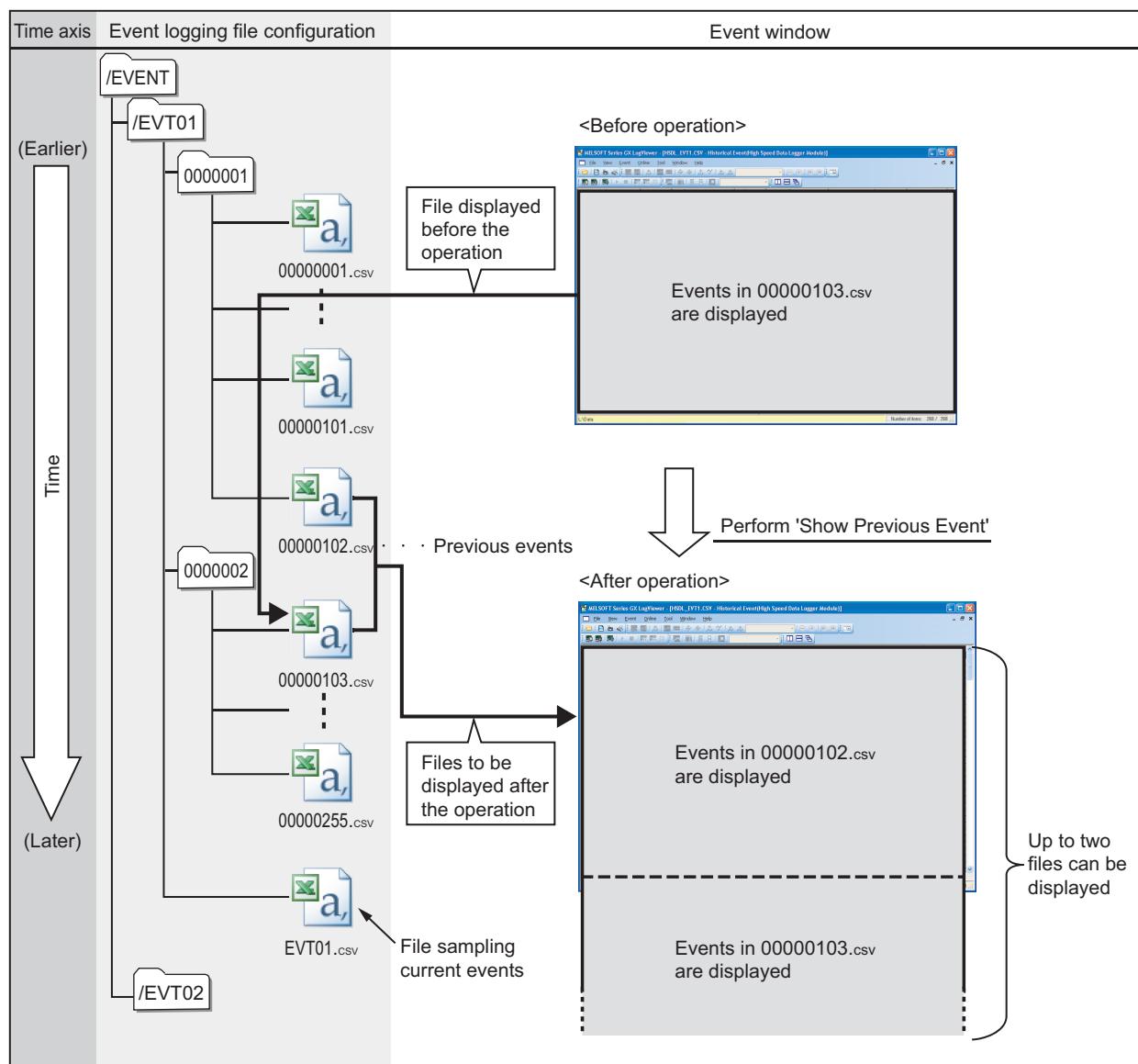
→ [Event] ⇒ [Show Previous Event]

Screen display

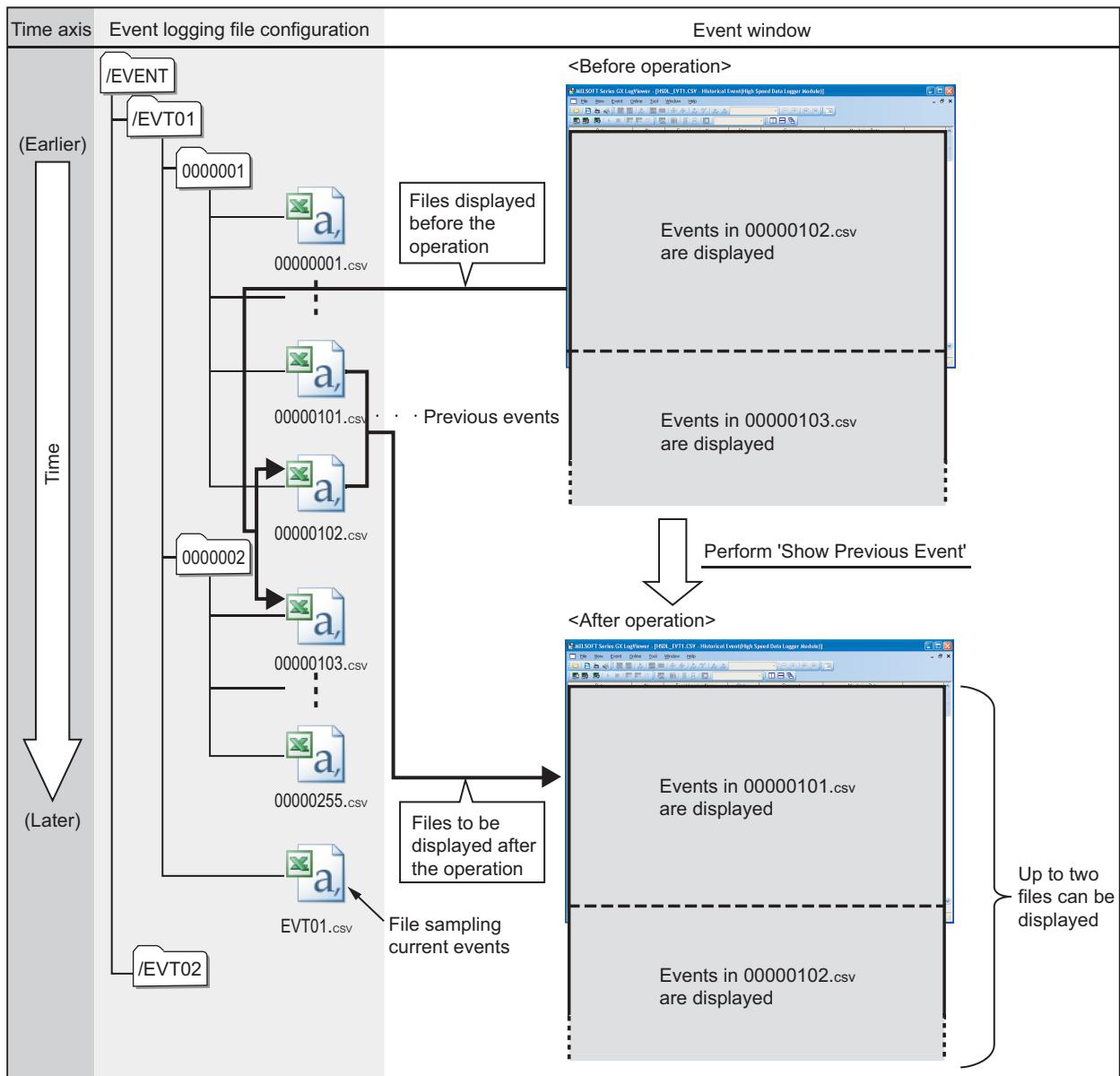
Either of the following two operations is used for displaying event logging files when performing the "Show Previous Event" function.

- Operating from the status when only one event logging file is displayed.
- Operating from the status when the previous event logging file is already displayed.

<Operating from the normal status>



<Operating from the status when the previous event logging file is already displayed>



Point

The 'Show Previous Event' function cannot be performed to an event logging file whose serial number is the smallest number.

(2) Displaying next events

Operating procedure

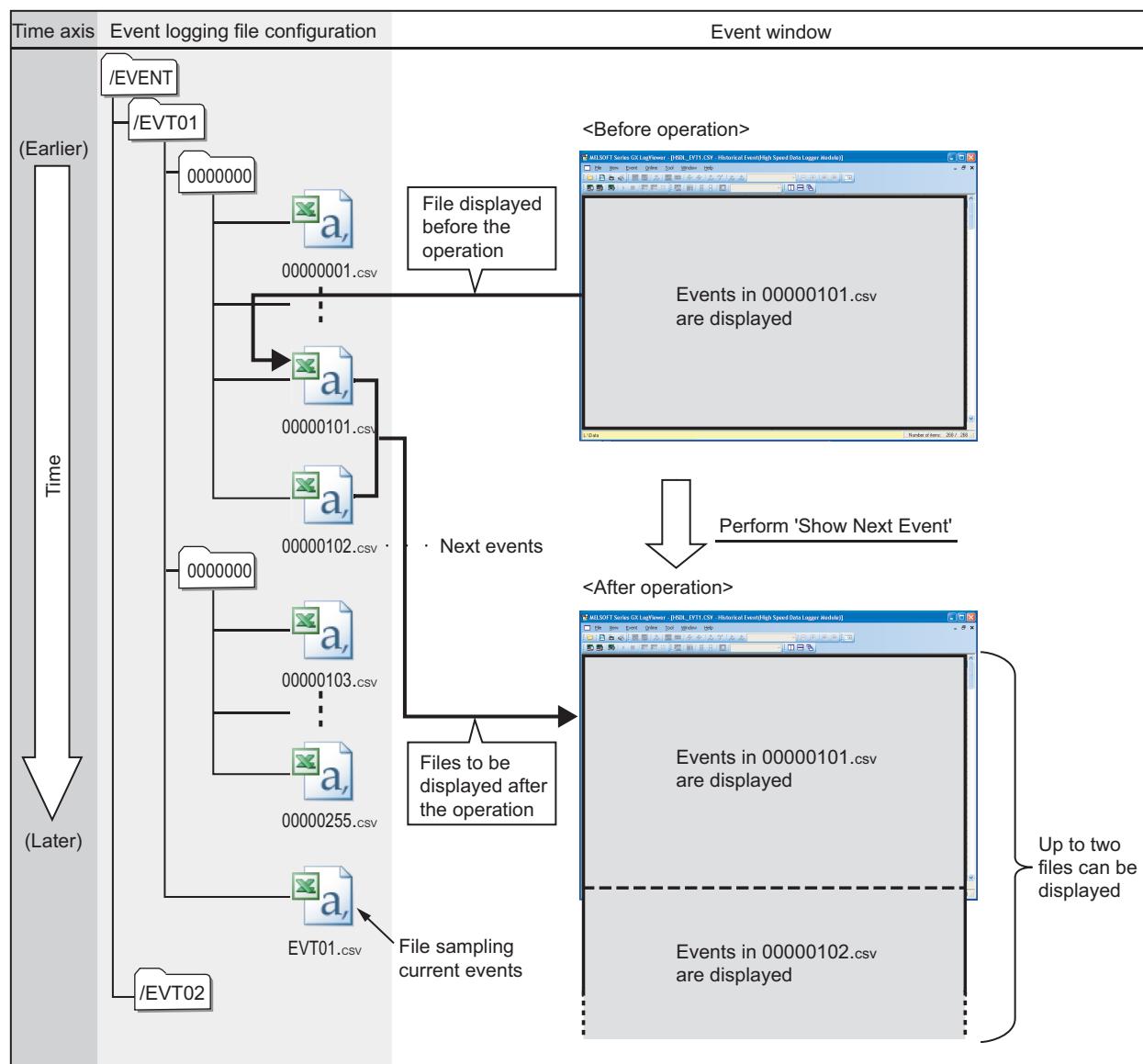
→ [Event] ⇒ [Show Next Event]

Screen display

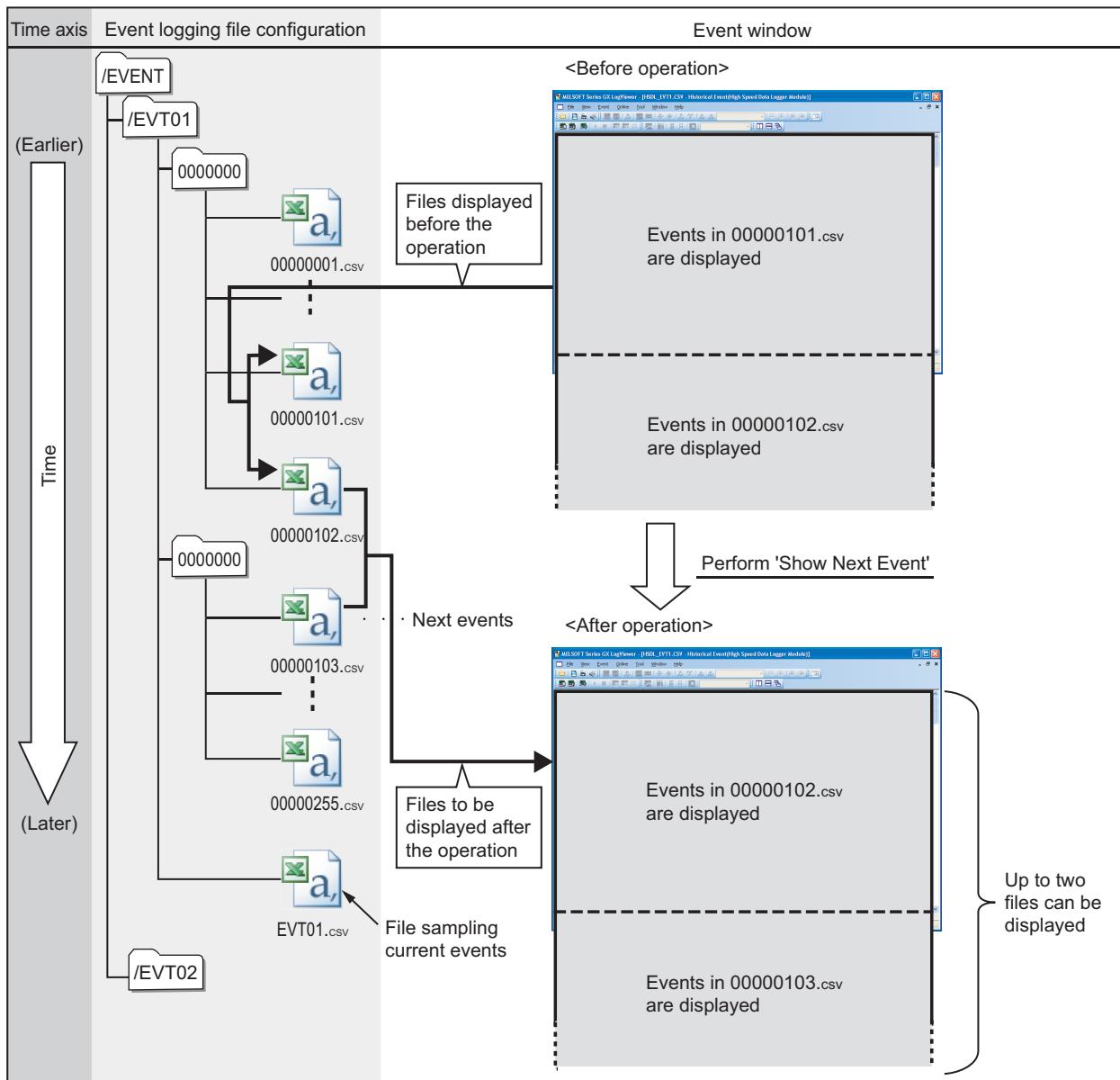
Either of the following two operations is used for displaying event logging files when performing the "Show Next Event" function.

- Operating from the status when only one event logging file is displayed.
- Operating from the status when the next event logging file is already displayed.

<Operating from the normal status>



<Operating from the status when the next event logging file is already displayed>



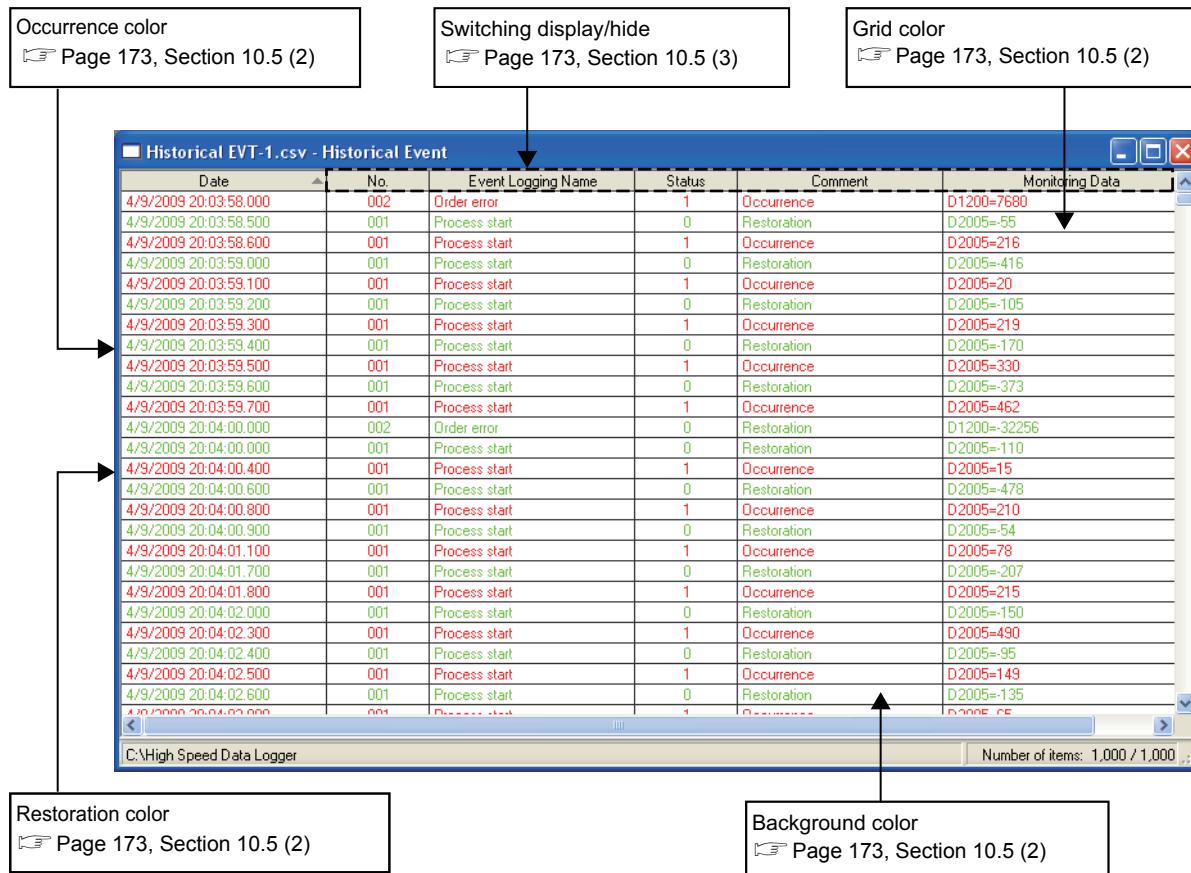
Point

- The "Show Next Event" function cannot be performed to an event logging file (a file that is sampling the current events) whose serial number is not assigned.
- Sorting may be reset when an event list is sorted and the "Show Previous Event"/"Show Next Event" function is performed.

10.5 Changing Display Settings of Event List

This section explains the method for customizing font color, background color, and display items in the event list.

The following figure shows customizable parts in the event list. Settings are changed on the [Event Properties](#) screen.



Remark

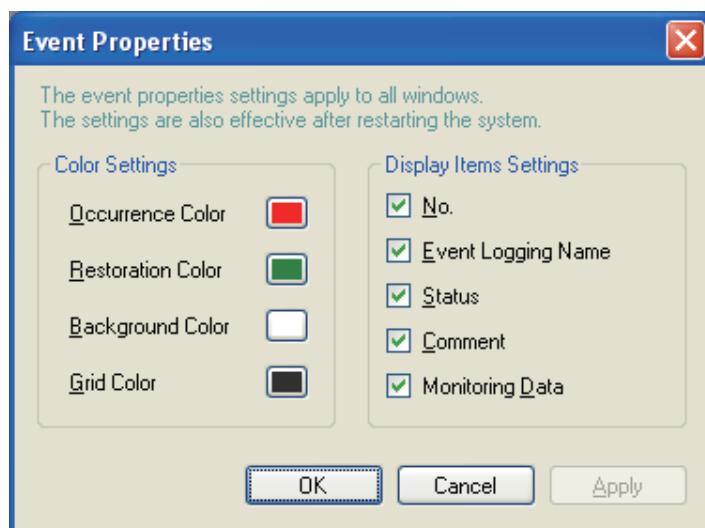
Since the settings of the event properties are common to all event windows, changes are reflected to all the event windows being displayed.

(1) Event properties screen

Operating procedure

-  [Event] ⇒ [Event Properties]
- Right-click on the event list, and select [Event Properties].

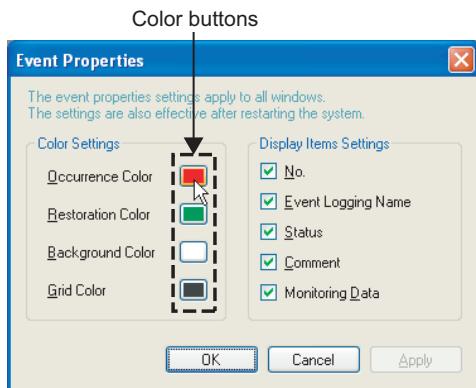
Setting screen



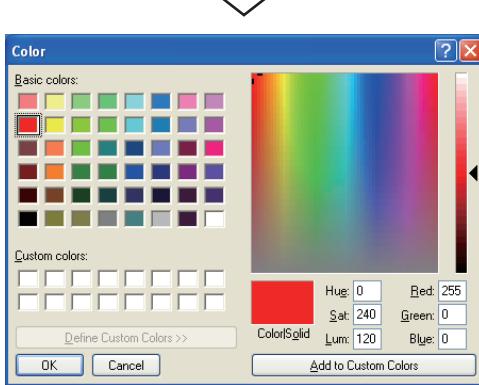
Item	Description
Color Settings	-
Occurrence Color	Specify the font color in lines displaying event occurrences.
Restoration Color	Specify the font color in lines displaying event restorations.
Background Color	Specify the background color of the event list.
Grid Color	Specify the grid color of the event list.
Display Items Settings	-
No.	Uncheck this item to hide the "No." column.
Event Logging Name	Uncheck this item to hide the "Event Logging Name" column.
Status	Uncheck this item to hide the "Status" column.
Comment	Uncheck this item to hide the "Comment" column.
Monitoring Data	Uncheck this item to hide the "Monitoring Data" column.
<input type="button" value="OK"/>	Fixes the settings and closes the screen.
<input type="button" value="Cancel"/>	Cancels the settings and closes the screen.
<input type="button" value="Apply"/>	Applies the settings to the event list. (The screen is not closed.)

(2) Changing Color Settings (Occurrence Color, Restoration Color, Background Color, Grid Color) of event list

Operating procedure



1. Click a color button of an item to be changed.



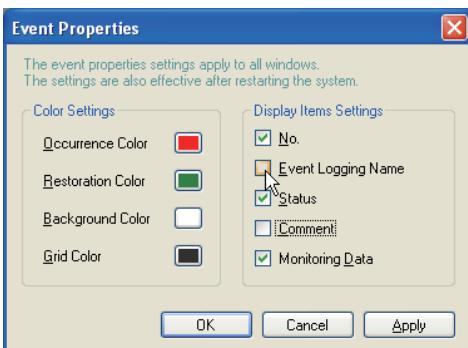
2. Select a color from "Basic colors" or "Custom colors" on the Color screen, and click the button.
3. Click the button or the button on the Event Properties screen.

Remark

"Custom colors" can be shared by the Event Properties and the Graph Properties

(3) Changing Display Items Settings (No., Event Logging Name, Status, Comment, Monitoring Data) in event list

Operating procedure



1. In "Display Item Settings", uncheck column items not to display in an event list.
2. Click the button or the button.

CHAPTER 11 SAVING LOGGING FILES TO PERSONAL COMPUTER

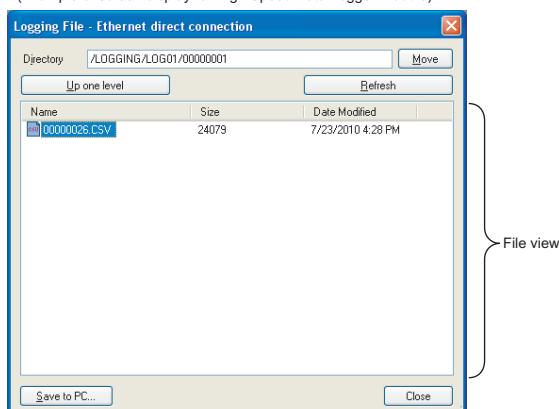
QnUDVCPU High Speed Data Logger High Speed Data Communication X Q Analog LCPU L Analog

This chapter explains the method for saving logging files in a memory card installed on a module to a personal computer. Saved files can be checked by Historical trend or Historical event.

Screen display

1.  [Online] ⇒ [Save Logging File to PC ()
2. Select an equipment from which logging files are obtained on the Connection Destination screen.
3. Specify a module to be connected and the connection method on the Transfer Setup screen.
 - For QnUDVCPU/LCPU and Q/L Analog Module: Transfer setup screen ( Page 72, Section 8.2.1)
 - For High Speed Data Logger Module: Transfer setup screen ( Page 72, Section 8.2.1)
4. Cancel the access restriction on the following screen.
 - For QnUDVCPU/LCPU and Q/L Analog Module: Enter remote password screen (Only when the remote password is set.)
 - For High Speed Data Logger Module: Access Authentication screen (Only when the access restriction is set.)

(Example of screen display for High Speed Data Logger Module)



Operating procedure

1. Select a file to be saved in the file view. (Multiple files can be selected.)

Item	Description
Directory *1	Displays a path of a directory being displayed in the file view. Or, specify a move destination directory.
 button *1	Moves to the specified destination directory.
 button *1	Moves up one directory level.
 button	Updates contents displayed in the file view.
File view	Displays a list of files and folders contained in the path specified in "Directory". (For details of logging file destination folder and folder configuration, refer to the corresponding manuals of modules.)

*1 : These items can be operated when saving destination is a CompactFlash card or an SD memory card.

2. Click the  button.

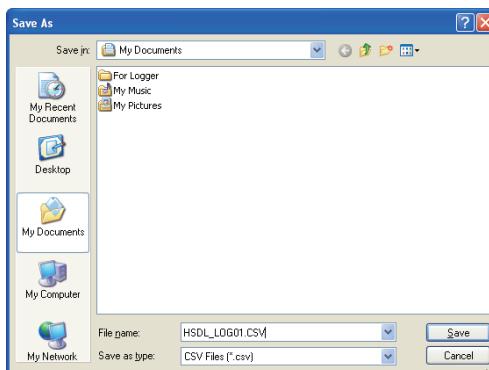
(Continued on the next page)

(From the previous page)

3. Specify the destination to save files.

(a) Saving a single file

Specify a file name and save it.

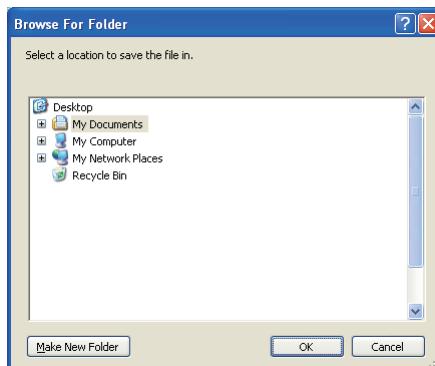


11

(b) Saving multiple files

Specify a destination folder and save multiple files at once.

They cannot be saved to separate folders and their file names cannot be changed.



Point

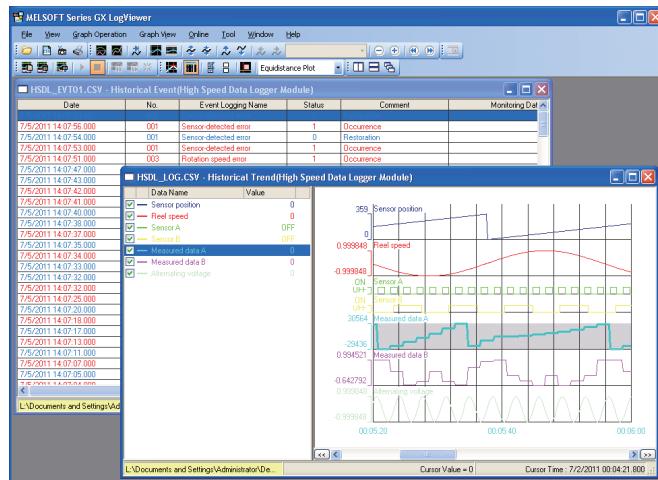
- CSV file format of the logging file
The CSV file format saved with "Save Logging File to PC" in this section differs from that of "Saving displayed data/events" written in CHAPTER 13.
For the CSV file format of the data acquired directly from the module by executing "Save Logging File to PC", refer to the manuals of each module.
- For details of access authentication, refer to the following manual.
└ High Speed Data Logger Module User's Manual
- For details of remote password, refer to the following manuals.
└ QCPU User's Manual (Function Explanation, Program Fundamentals)
└ QnUCPU User's Manual (Function Explanation, Program Fundamentals)
└ MELSEC-L CPU Module User's Manual (Function Explanation, Program Fundamentals)
- Other monitoring updates may be delayed in the following cases since saving data logging files requires time.
 - Saving a data logging file during the execution of data logging
 - Saving a large-volume data logging file

CHAPTER 12 USING WINDOWS/FOLDERS DISPLAYED IN PAST

QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

12.1 Overview

This function saves window and folder information of the trend window and event window being displayed using 'Frequently-used Window Configuration' function, 'Recent Windows' function, or 'Recent Folders' function and redisplay them easily next time.



Item	Description	Target settings to be saved	Reference
Frequently-used Window Configuration	<p>Names the information explains on the right of every trend window and event window being displayed, and adds them to the menu.</p> <p>The added window can be redisplayed easily from the menu</p>	<ul style="list-style-type: none"> Window layout of each window Connection information with a module and save destination information of the logging file All the data being displayed and event Displaying trend window ¹ Displaying event window ² Sorting status and filtering condition of an event list 	Page 177, Section 12.2
Recent Windows	<p>Adds every trend window and event window being displayed to the menu automatically.</p> <p>The added window can be redisplayed easily from the menu.</p>	<ul style="list-style-type: none"> Connection information with a module and save destination information of the logging file All the data being displayed and event Displaying trend window ¹ Displaying event window ² Sorting status and filtering condition of an event list 	Page 181, Section 12.3
Recent Folders	<p>Adds a specified folder when opening or saving to the menu automatically.</p> <p>The added folder can be opened and selected logging file in the menu easily.</p>	<p>Save destination of data and events being displayed</p> <ul style="list-style-type: none"> Directory path in a personal computer Directory path of a memory card installed on a module 	Page 182, Section 12.4

¹ : Excluding the background color, grid color, and trigger ON/OFF color.

² : Excluding the background color, grid color, occurrence/restoration color, and display check status of each column.

12.2 Adding/Restoring Frequently-Used Window Configurations to Menu

By adding frequently-used trend windows or event windows to the menu as 'frequently-used window configurations', they can easily be restored.

'frequently-used window configurations' can be exported and used for other logon users or a personal computer.

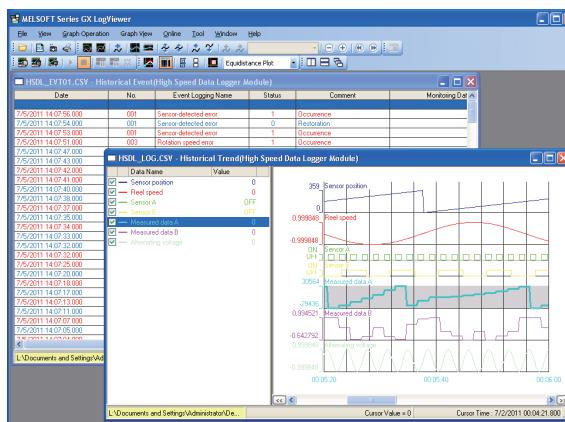
This section explains the following operations related to 'frequently-used window configurations'.

- Adding a 'frequently-used window configuration' to the menu
- Restoring a 'frequently-used window configuration'
- Deleting, renaming or sorting a 'frequently-used window configuration'
- Changing order of 'frequently-used window configurations' in the menu
- Importing/exporting 'frequently-used window configurations'

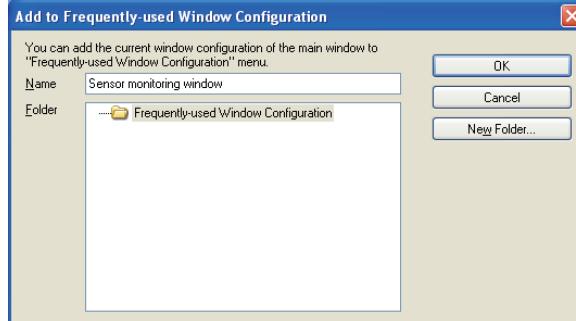
(1) Adding a 'frequently-used window configuration' to the menu

Operating procedure

1. Arrange a window configuration to be added as a 'frequently-used window configuration'.



2. [Window] ⇒ [Frequently-used Window Configuration] ⇒ [Add to Frequently-used Window Configuration]
3. On the Add to Frequently-used Window Configuration screen, enter "Name" and click the button.



Remark

A new folder can be created under the folder being selected on the Add to Frequently-used Window Configuration screen. Select a folder name and click the button.

(2) Restoring a 'frequently-used window configuration'

Operating procedure

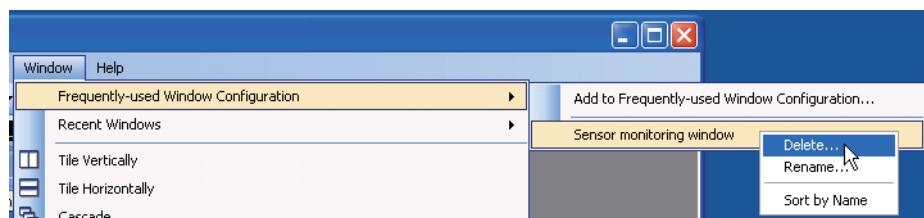
① [Window] ⇒ [Frequently-used Window Configuration] ⇒ [(name of a frequently-used window configuration)]



(3) Deleting, renaming or sorting a 'frequently-used window configuration'

Operating procedure

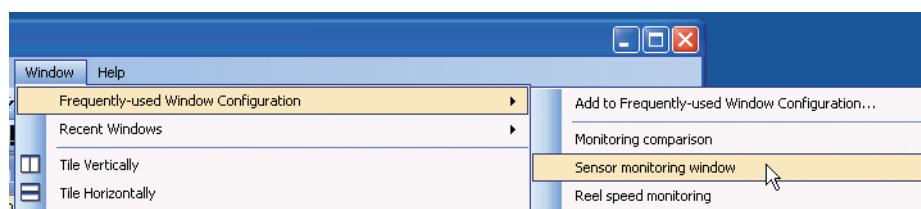
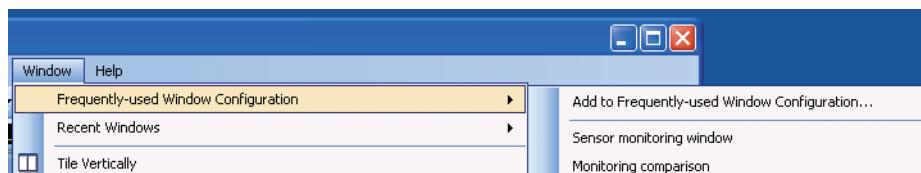
- ① [Window] ⇒ [Frequently-used Window Configuration]
2. Select a desired [(name of a frequently-used window configuration)], and right-click it.
3. Select [Delete], [Rename] or [Sort by Name].



(4) Changing order of 'frequently-used window configurations' in the menu

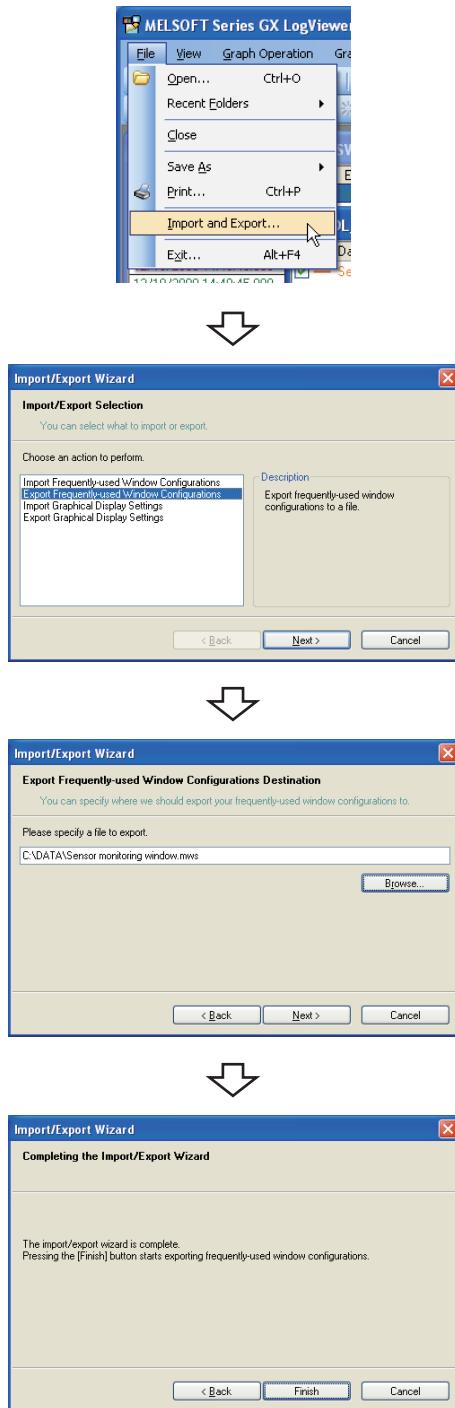
Operating procedure

- ① [Window] ⇒ [Frequently-used Window Configuration]
2. Select a desired [(frequently-used window configuration)], drag it to the desired position.
(Example: Dragging and dropping 'Sensor monitoring window' over 'Monitoring comparison')



(5) Exporting 'frequently-used window configurations'

Operating procedure



Remark

The folder hierarchy information is also saved in an export file.

1. [File] \Rightarrow [Import and Export]

2. Select [Export Frequently-used Window Configurations].

3. Click the button.

4. Specify a destination directory path and file name to save export data.

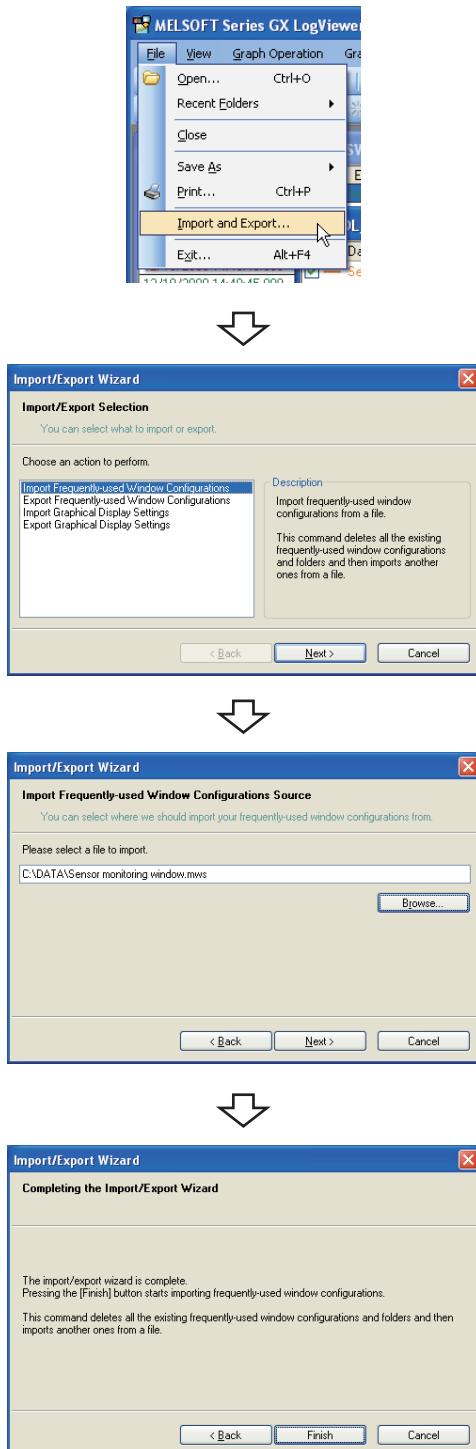
(An extension '.mws' is added automatically.)

5. Click the button.

6. Click the button.

(6) Importing 'frequently-used window configurations'

Operating procedure



Remark

- All information included in an export file is imported.
- The import operation discards a current window setting, and then imports a file.

12.3 Redisplaying Recently-Used Windows

By registering recently-used trend windows or event windows to the menu automatically as 'recent windows', they can easily be redisplayed.

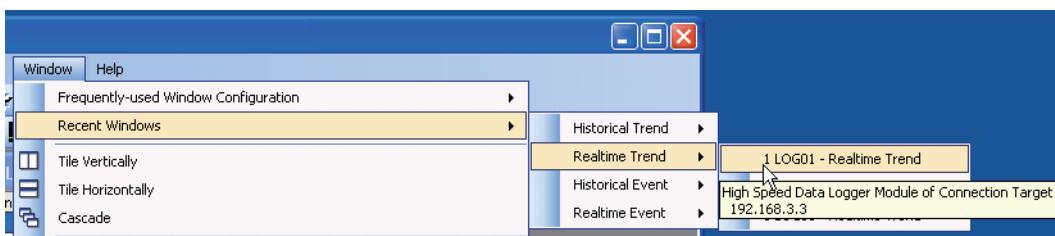
Remark

Up to nine 'recent windows' can be stored by each of the following window types. The chronologically oldest 'recent window' is removed when the tenth 'recent window' is stored.

- Historical trend window
- Realtime trend window
- Historical event window
- Realtime event window

Operating procedure

→ [Window] ⇒ [Recent Windows] ⇒ [Historical Trend] / [Realtime Trend] / [Historical Event] / [Realtime Event] ⇒ [(name of a recent window)]



Remark

Any of the following tooltips is displayed by placing a mouse on a name of a 'recent window' and it enables users to distinguish 'recent windows' of the same name from each other. Tooltips differ depending on the target of the data logging and the event logging.

- Directory path of a memory card installed on a connected module
- Directory path of a data logging file and event logging file stored in a personal computer
- IP address of a connected module

Point

If data in a memory card is changed after the setting of a window being displayed has been stored, the window configuration may not be restored using the 'recent window' function.

12.4 Redisplaying Recently-Used Folders

By registering recently-used folders to the menu automatically as 'recent folders', they can easily be redisplayed.

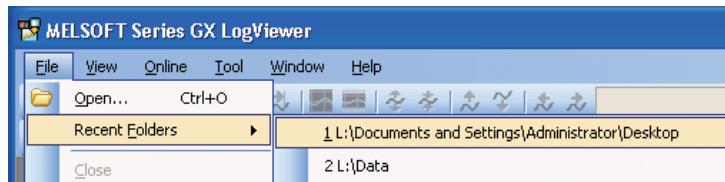
Remark

Up to nine 'recent folders' can be stored. The chronologically oldest 'recent folder' is removed when the tenth 'recent folder' is stored.

Operating procedure

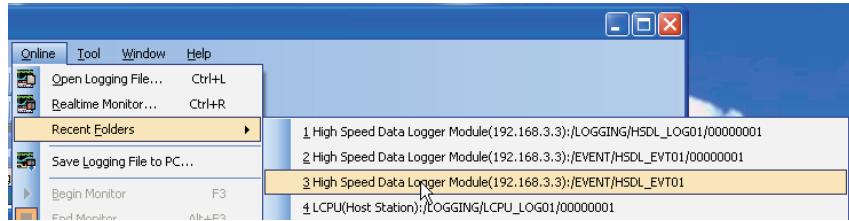
(a) Opening a logging file in a personal computer

→ [File] ⇒ [Recent Folders]



(b) Opening a logging file in a memory card installed on a module

→ [Online] ⇒ [Recent Folders]



CHAPTER 13 SAVING DISPLAYED DATA/EVENTS

QnUDVCPU **High Speed Data Logger** **High Speed Data Communication** **Q Analog** **LCPU** **L Analog**

This function saves data being displayed in trend windows and events being displayed in event windows to a CSV file or image file (BMP/JPG/PNG) in a personal computer.

Saved CSV files can be displayed on trend windows and event windows.

13.1 Save Target

The data and event being displayed on the active window (historical window, realtime window) can be saved.

Point

- Realtime trend data can be saved in CSV format only when the monitoring process is stopped or the graph drawing is paused.
- When two data logging files or two event logging files are consecutively displayed, their data or events can be saved to one file.

Remark

For High speed data communication module, only the data being displayed on the active realtime trend window can be saved.

13

13.1 Save Target

13.2 Saving Displayed Data

Data displayed on the active historical trend window and realtime trend window are saved to either following file.

- CSV file
- Image file

13.2.1 Saving displayed data to CSV file

Data displayed in the graph legend area of active trend window are saved to a CSV file.

When saving historical trend data, data names are saved in a selected language.

Operating procedure

1.  [File] ⇒ [Save As] ⇒ [Save CSV File] ()
2. Enter a file name, and click the  button.

(1) Data to be saved

(a) For Historical trend

Data of a data logging file(s) being displayed are saved.

(b) For Realtime trend

Data received from the start of monitoring to the pause of graph drawing are saved.

Remark

.....
Data removed from the graph legend area are not included in the save target.
.....

(2) Format specification of CSV file

CSV file formats may differ depending on the logging file type. For details of the format, refer to the following table.

Logging file type	Reference
QnUDVCPU/LCPU	Page 185, (2)(a) in this section
High Speed Data Logger Module	Page 188, (2)(b) in this section
High Speed Data Communication Module	Page 191, (2)(c) in this section
Q/L Series Analog Module	Page 194, (2)(d) in this section
Energy Measuring Unit	Page 196, (2)(e) in this section
Sampling trace	Page 199, (2)(f) in this section

(a) QnUDVCPU/LCPU

①Format specification

The following explains the format specification of CSV files.

Item	Description
Delimiter	, (comma)
Linefeed code	CRLF(0x0D,0x0A)
Character code	ASCII
Number of rows	Maximum number of rows:131074 rows (data rows +4)

②Output data of rows/columns

The following is an example of output data of rows/columns.

File information row	[LOGGING]	L1	3	4	5	2																
Comment row	Logging output result																					
Linefeed code																						
Character code																						
Data type information row	DATE/TIME[YYYY/MM/DD hh:mm:ss ms]	INTERVAL	STEP NO.	PROGRAM NAME	INDEX	BIT[1:0]	SHORT[DEC.0]	SHORT[DEC.0]	SHORT[DEC.0]	SHORT[DEC.0]	BIT[1:0]	Trigger										
Data name row	TIME	msec	INTERVAL[us]	STEP NO.	PROGRAM NAME	INDEX	SM402	D800	D2005	D2003	D3	M0										
	2011/07/02 04:06:35	752	0	65	MAIN9	1	0	11	-8	5631	14	1										
	2011/07/02 04:06:35	757	5000	65	MAIN9	2	0	12	-8	5631	15	0										
	2011/07/02 04:06:35	762	5000	65	MAIN9	3	0	13	-8	5631	16	1										
	2011/07/02 04:06:35	767	5000	65	MAIN9	4	0	14	-8	5631	17	0										
	2011/07/02 04:06:35	772	5000	65	MAIN9	5	0	15	-8	5631	18	1										

③File information row

The file information row outputs information related to files.

Column number	Column name	Output data
1st column	File Type	File type of output file Fixed value: [LOGGING]
2nd column	File version	Version of output file Fixed value: QnUDVCPU:Q1 LCPU:L1
3rd column	Row number of data type information row	Number indicating the data type information row Fixed value: With comment row: 3 Without comment row: 2
4th column	Row number of data name row	Number indicating the data name row Fixed value: With comment row: 4 Without comment row: 3
5th column	Starting row number of data rows	Starting number of data rows With comment row: 5 Without comment row: 4
6th column	Row number of comment row ¹	Number indicating the comment row Fixed value: 2

*1 : Data in this column are not output if data in the comment row are not output to logging data.

④Data type information row

The data type information row outputs data types of each column.

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Data type of date and time Fixed string: DATETIME[YYYY/MM/DD hh:mm:ss]
2nd column	Millisecond column ^{*1}	Data type of millisecond of date and time Fixed string: ms]
3rd column	Data sampling interval column	Data type of data sampling interval column Fixed string: INTERVAL
4th column	Execution step number column	Data type of execution step number Fixed string: STEP NO.
5th column	Execution program name column	Data type of execution program name Fixed string: PROGRAM NAME
6th column	Index column	Index column Fixed string: INDEX
7th column and later	Data column	Data type of sampled data Output format: Data type output string [Additional information] ☞ Page 201, (2)(g) in this section
Last column	Trigger ON information column	Fixed string regardless of continuous logging/trigger logging Output format: TRIGGER[(trigger ON string);] ^{*2}

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

2 : For the continuous logging, '' is output for 'trigger ON string'.

⑤Data name row

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Title of date and time column Fixed string: TIME
2nd column	Millisecond column ^{*1}	Title of millisecond of date and time Fixed string: msec
3rd column	Data sampling interval column	Title of Data sampling interval column Fixed string: INTERVAL[us]
4th column	Execution step number column	Title of execution step number Fixed string: STEP NO,
5th column	Execution program name column	Title of execution program name Fixed string: PROGRAM NAME
6th column	Index column	Title of index column Fixed string: INDEX
7th column and later	Data column	Title of data column Output format: Device No. or device comments
Last column	Trigger ON information column	Title of trigger column Fixed string: Trigger

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

⑥Data row

For a historical trend window, data are output in the order that the data are stored to a data logging file.

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Date and time information Output format: YYYY/MM/DD hh:mm:ss
2nd column	Millisecond column ^{*1}	Value of millisecond
3rd column	Data sampling interval column ^{*2}	Value of data sampling interval
4th column	Execution step number column ^{*2}	Value of execution step number Output format: Integer value
5th column	Execution program name column ^{*2}	Execution program name Output format: STRING (program name)
6th column	Index column ^{*3}	Value of index Output format: Integer value
7th column and later	Data column	Value of sampled device Output format: Value corresponds to the type in the data type information row
Last column	Trigger ON information column	Information at trigger occurrence Output format: String specified by configuration tool

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

*2 : When the data, whose columns are set not to output by the configuration tool, is saved to a CSV file, the data in columns correspond to those not-output items are not output, and only the delimiter ',' (comma) is output.

*3 : When the data, whose indexes are set not to output by the configuration tool, is saved to a CSV file, the indexes with starting from 1 are automatically output.

Point

The CSV file format explained in this section differs from the CSV file format obtained from QnUDVCPU/LCPU. For module CSV file format, refer to the following manuals.

 QnUDVCPU/LCPU User's Manual (Data Logging Function)

(b) High Speed Data Logger Module

①Format specification

The following explains the format specification of CSV files.

Item	Description
Delimiter	, (comma)
Linefeed code	CRLF(0x0D,0x0A)
Character code	ASCII
Number of rows	Maximum number of rows: 200003 rows (data rows +3)

②Output data of rows/columns

The following is an example of output data of rows/columns.

File information row	→ [LOGGING]	1	2	3	4	5	6	7
Data type information row	→ DATETIME[YYYY/MM/DD hh:mm:ss	us]	INDEX	BIT[On:Off]	SHORT[DEC.0]	FLOAT[DEC.7]	TRIGGER[発生,解除]	
Data name row	→ TIME	usec	INDEX	Data1	Data2	Data3		Trigger
Data row	{	2011/3/31 11:46	32000	1 Off	0	0.5403		
		2011/3/31 11:46	32000	2 Off	1	0.83229		
		2011/3/31 11:46	32000	3 Off	0	2.97		
		2011/3/31 11:46	32001	4 Off	3	2.6146		
		2011/3/31 11:46	32002	5 Off	4	1.4183		

③File information row

The file information row outputs information related to files.

Column number	Column name	Output data
1st column	File Type	File type of output file Fixed value: [LOGGING]
2nd column	File version	Version of output file Fixed value: 1
3rd column	Row number of data type information row	Number indicating the data type information row Fixed value: 2
4th column	Row number of data name row	Starting number of data rows With comment row: Fixed value: 3
5th column	Starting row number of data rows	Starting number of data rows Fixed value: 4

④Data type information row

The data type information row outputs data types of each column.

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Data type of date and time Fixed string: DATETIME[YYYY/MM/DD hh:mm:ss]
2nd column	Microsecond column ^{*1}	Data type of microsecond of date and time Fixed string: us]
3rd column	Index column	Index column Fixed string: INDEX
4th column and later	Data column	Data type of sampled data Output format: Data type output string [Additional information] ☞ Page 201, (2)(g) in this section
Last column	Trigger ON information column	Fixed string regardless of continuous logging/trigger logging Output format: TRIGGER[(trigger ON string); (trigger OFF string)] ^{*2}

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

2 : On a historical trend window opened with a CSV file, a trigger ON string and trigger OFF string are displayed according to the information in the file. On a historical trend window opened with a binary file and a realtime trend window, a trigger ON string = '' and a trigger OFF string = '-' are displayed.

⑤Data name row

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Title of date and time column Fixed string: TIME
2nd column	Microsecond column ^{*1}	Title of microsecond column Fixed string: usec ^{*2}
3rd column	Index column	Title of index column Fixed string: INDEX
4th column and later	Data column	Title of data column Output format: Data name
Last column	Trigger ON information column	Title of trigger column Fixed string: Trigger

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

*2 : When the data, whose Date and time column is set not to output and Microsecond column is set to output by the configuration tool, is saved to a CSV file, the Microsecond column is output.

⑥Data row

For a historical trend window, data are output in the order that the data are stored to a data logging file.

For a realtime trend window, data are output in the order that the data are received.

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Date and time information Output format: YYYY/MM/DD hh:mm:ss
2nd column	Microsecond column ^{*1}	Data type of data sampling interval column
3rd column	Index column ^{*2}	Index value Output format: Integer value
4th column and later	Data column	Value of sampled device Output format: Value corresponds to the type in the data type information row
Last column	Trigger ON information column	Information at trigger occurrence Output format: String specified by configuration tool

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

*2 : When the data, whose indexes are set not to output by the configuration tool, is saved to a CSV file, the indexes with starting from 1 are automatically output.

Point

The CSV file format explained in this section differs from the CSV file format obtained from High Speed Data Logger Module. For module CSV file format, refer to the following manuals.

 High Speed Data Logger Module User's Manual

(c) High Speed Data Communication Module

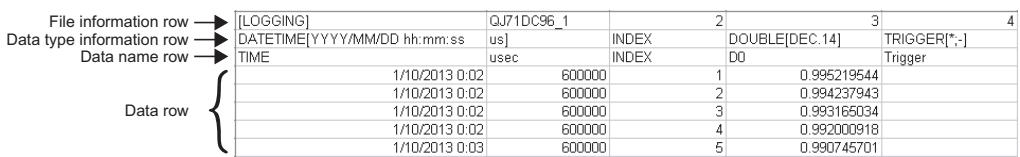
①Format specification

The following explains the format specification of CSV files.

Item	Description
Delimiter	, (comma)
Linefeed code	CRLF(0x0D,0x0A)
Character code	ASCII
Number of rows	Maximum number of rows: 100004 rows (data rows +3)

②Output data of rows/columns

The following is an example of output data of rows/columns.



File information row	[LOGGING]	QJ71DC96_1	2	3	4
Data type information row	DATETIME[YYYY/MM/DD hh:mm:ss]	us	INDEX	DOUBLE[DEC,14]	TRIGGER["-"]
Data name row	TIME	usec	INDEX	DO	Trigger
	1/10/2013 0:02	600000	1	0.995219544	
	1/10/2013 0:02	600000	2	0.994237943	
	1/10/2013 0:02	600000	3	0.993165034	
	1/10/2013 0:02	600000	4	0.992000918	
	1/10/2013 0:03	600000	5	0.990745701	

③File information row

The file information row outputs information related to files.

Column number	Column name	Output data
1st column	File Type	File type of output file Fixed value: [LOGGING]
2nd column	File version	Version of output file Fixed value: QJ71DC96_1 ¹
3rd column	Row number of data type information row	Number indicating the data type information row Fixed value: 2
4th column	Row number of data name row	Starting number of data rows With comment row: Fixed value: 3
5th column	Starting row number of data rows	Starting number of data rows Fixed value: 4

*1 : (Product type)_ (Version number) is displayed at the File version column.

④Data type information row

The data type information row outputs data types of each column.

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Data type of date and time Fixed string: DATETIME[YYYY/MM/DD hh:mm:ss]
2nd column	Microsecond column ^{*1}	Data type of microsecond of date and time Fixed string: us]
3rd column	Index column	Index column Fixed string: INDEX
4th column and later	Data column	Data type of sampled data Output format: Data type output string [Additional information] ☞ Page 201, (2)(g) in this section
Last column	Trigger ON information column	Fixed string regardless of continuous logging/trigger logging Output format: TRIGGER[(trigger ON string); (trigger OFF string)] ^{*2}

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

2 : On a historical trend window opened with a CSV file, a trigger ON string and trigger OFF string are displayed according to the information in the file. On a historical trend window opened with a binary file and a realtime trend window, a trigger ON string = '' and a trigger OFF string = '-' are displayed.

⑤Date name row

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Title of date and time column Fixed string: TIME
2nd column	Microsecond column ^{*1}	Title of microsecond column Fixed string: usec ^{*2}
3rd column	Index column	Title of index column Fixed string: INDEX
4th column and later	Data column	Title of data column Output format: Data name
Last column	Trigger ON information column	Title of trigger column Fixed string: Trigger

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

*2 : When the data, whose Microsecond column is set not to output by the configuration tool, is saved to a CSV file, the Microsecond column is output.

⑥Data row

For a historical trend window, data are output in the order that the data are stored to a data logging file.

For a realtime trend window, data are output in the order that the data are received.

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Date and time information Output format: YYYY/MM/DD hh:mm:ss
2nd column	Microsecond column ^{*1}	Data type of data sampling interval column
3rd column	Index column ^{*2}	Index value Output format: Integer value
4th column and later	Data column	Value of sampled device Output format: Value corresponds to the type in the data type information row
Last column	Trigger ON information column	— (Blank)

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

*2 : When the data, whose indexes are set not to output by the configuration tool, is saved to a CSV file, the indexes with starting from 1 are automatically output.

Point

The CSV file format explained in this section differs from the CSV file format obtained from High Speed Data Communication Module. For module CSV file format, refer to the following manuals.

 High Speed Data Communication Module User's Manual

(d) Q/L Series Analog Module

①Format specification

The following explains the format specification of CSV files.

Item	Description
Delimiter	, (comma)
Linefeed code	CRLF(0x0D,0x0A)
Character code	ASCII
Number of rows	Maximum number of rows: 10003 rows (data rows +3)

②Output data of rows/columns

The following is an example of output data of rows/columns.

File information row	[LOGGING]	QAD1	2	3	4
Data type information row	INDEX	SHORT[DEC.0]	TRIGGER[*]		
Data name row	INDEX	DATE2011/06/25 16:26:07 I/O:0000 CH1 CYCLE: 320us	Trigger		
Data row	{	1	4		
		2	-3		
		3	-10		

③File information row

The file information row outputs information related to files.

Column number	Column name	Output data
1st column	File Type	File type of output file Fixed value: [LOGGING]
2nd column	File version	The file version of Q/L Analog Module differs depending on the module type. For details, refer to the user's manual of each module. (Example)Q68CT: Q68CT_1 (Example)L60AD4: LAD1
3rd column	Row number of data type information row	Number indicating the data type information row Fixed value: 2
4th column	Row number of data name row	Number indicating the data name row Fixed value: 3
5th column	Starting row number of data rows	Starting number of data row Fixed value: 4

④Data type information row

The data type information row outputs data types of each column.

Column number	Column name	Output data
1st column	Index column	Index column Fixed string: INDEX
2nd column and later	Data column	Data type of sampled data Output format: Data type output string [Additional information] ☞ Page 201, (2)(g) in this section
Last column	Trigger ON information column	Fixed string: TRIGGER[(trigger ON string)] ¹

¹*1 : '*' is output to 'trigger ON string'.

⑤Data name row

Column number	Column name	Output data
1st column	Index column	Title of index column Fixed string: INDEX
2nd column and later	Data column	Title of data column Output format: 'DATE:' Hold trigger occurrence time 'I/O:' XY address No. to acquire logging data 'CH:' Target channel 'CYCLE:' Logging cycle (Fixed string is displayed in '')
Last column	Trigger ON information column	Title of trigger occurrence information column Fixed string: Trigger

⑥Data row

For a historical trend window, data are output in the order that the data are stored to a data logging file.

Column number	Column name	Output data
1st column	Index column ^{*1}	Value of index Output format: Integer value
2nd column and later	Data column	Value of sampled device Output format: Value corresponds to the type in the data type information row
Last column	Trigger ON information column	Information at trigger occurrence

*1 : For Q/L Series Analog Module, the index is not output in a logging file. When saving the data in CSV file, the index is output with continuous numbers from 1 automatically.

Point

The CSV file format explained in this section differs from the CSV file format obtained from Q/L Series Analog Module. For module CSV file format, refer to the user's manual of each module.

(e) Energy Measuring Unit

① Format specification

The following explains the format specification of CSV files.

Item	Description
Delimiter	, (comma)
Linefeed code	CRLF(0x0D,0x0A)
Character code	ASCII
Number of rows	Maximum number of rows: 3603 rows (data rows +3)

② Output data of rows/columns

The following is an example of output data of rows/columns.

File information row	→ [LOGGING]	YM_1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Data type information row	→ DATETIME[YYYY/MM/DD hh:mm:ss]	us	INDEX	DOUBLE[DEC.14]	DOUBLE[DEC.14]	DOUBLE[DEC.14]	DOUBLE[DEC.14]	ch1_PF[%]	Trigger							
Data name row	→ TIME	usec	INDEX	ch1_W[kW]	ch1_V[V]	ch1_A[A]	ch1_PF[%]									
Data row	{	3/11/2013 20:00	0	1	4801	3102	552	84.1								
		3/11/2013 20:00	0	2	4801	3102	552	84.1								
		3/11/2013 20:00	0	3	4801	3102	552	84.1								
		3/11/2013 20:00	0	4	4801	3102	552	84.1								
		3/11/2013 20:00	0	5	4801	3102	552	84.1								

③ File information row

The file information row outputs information related to files.

Column number	Column name	Output data
1st column	File Type	File type of output file Fixed value: [LOGGING]
2nd column	File version	Version of output file Fixed value: YM_1*1
3rd column	Row number of data type information row	Number indicating the data type information row Fixed value: 2
4th column	Row number of data name row	Starting number of data rows With comment row: Fixed value: 3
5th column	Starting row number of data rows	Starting number of data rows Fixed value: 4

*1 : (Product type)_ (Version number) is displayed at the File version column.

④Data type information row

The data type information row outputs data types of each column.

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Data type of date and time Fixed string: DATETIME[YYYY/MM/DD hh:mm:ss]
2nd column	Microsecond column ^{*1}	Data type of microsecond of date and time Fixed string: us]
3rd column	Index column	Index column Fixed string: INDEX
4th column and later	Data column	Data type of sampled data Output format: Data type output string [Additional information] ☞ Page 201, (2)(g) in this section
Last column	Trigger ON information column	Fixed string regardless of continuous logging/trigger logging Output format: TRIGGER[(trigger ON string); (trigger OFF string)] ^{*2}

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

2 : On a historical trend window opened with a CSV file, a trigger ON string and trigger OFF string are displayed according to the information in the file. On a historical trend window opened with a binary file and a realtime trend window, a trigger ON string = '' and a trigger OFF string = '-' are displayed.

⑤Data name row

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Title of date and time column Fixed string: TIME
2nd column	Microsecond column ^{*1}	Title of microsecond column Fixed string: usec ^{*2}
3rd column	Index column	Title of index column Fixed string: INDEX
4th column and later	Data column	Title of data column Output format: Data name
Last column	Trigger ON information column	Title of trigger column Fixed string: Trigger

*1 : When the data, whose Date and time column is set not to output by the configuration tool, is saved to a CSV file, the Date and time column and the Millisecond column are not output.

*2 : When the data, whose Date and time column is set to output and Microsecond column is set not to output, is saved to a CSV file, the Microsecond column is output.

⑥Data row

For a historical trend window, data are output in the order that the data are stored to a data logging file.

For a realtime trend window, data are output in the order that the data are received.

Column number	Column name	Output data
1st column	Date and time column ^{*1}	Date and time information Output format: YYYY/MM/DD hh:mm:ss
2nd column	Microsecond column ^{*1}	Data type of data sampling interval column Fixed value: 0
3rd column	Index column ^{*2}	Index value Output format: Integer value
4th column and later	Data column	Value of sampled device Output format: Value corresponds to the type in the data type information row
Last column	Trigger ON information column	— (Blank)

*1 : When the data, whose Date and time column is set not to output, is saved to a CSV file, the Date and time column and the Microsecond column are not output.

*2 : When the data, whose indexes are set not to output, is saved to a CSV file, the indexes with starting from 1 are automatically output.

Point

The CSV format explains in this section and acquired from the Energy Measuring Unit differs.
For the CSV file format of Energy Measuring Unit, refer to the manual of Energy Measuring Unit.

(f) Sampling trace

①Format specification

The following explains the format specification of CSV files.

Item	Description
Delimiter	, (comma)
Linefeed code	CRLF(0x0D,0x0A)
Character code	ASCII
Number of rows	Maximum number of rows:8196 rows (data rows +4)

②Output data of rows/columns

The following is an example of output data of rows/columns.

File information row	→ [LOGGING]	SamplingTrace_1	2	3	4		
Data type information row	→ INDEX	BIT[1:0]	BIT[1:0]	BIT[1:0]	LONG[DEC.0]	SHORT[DEC.0]	SHORT[DEC.0]
Data name row	→ INDEX	M0	M1	M8191	D0	D12287	D10
Data row	→ INDEX	1	0	1	0	96552	200
		2	1	1	0	128736	200
		3	0	1	0	160920	200
		4	1	1	0	0	200
		5	0	1	0	0	200

③File information row

The file information row outputs information related to files.

Column number	Column name	Output data
1st column	File Type	File type of output file Fixed value: [LOGGING]
2nd column	File version	Version of output file SamplingTrace_(Version information) (Example)SamplingTrace_1
3rd column	Row number of data type information row	Number indicating the data type information row Fixed value: With comment row: 3 Without comment row: 2
4th column	Row number of data name row	Number indicating the data name row Fixed value: With comment row: 4 Without comment row: 3
5th column	Starting row number of data rows	Starting number of data rows With comment row: 5 Without comment row: 4
6th column	Row number of comment row*1	Number indicating the comment row Fixed value: 2

*1 : Data in this column are not output if data in the comment row are not output to logging data.

④Data type information row

The data type information row outputs data types of each column.

Column number	Column name	Output data
1st column	Index column	Index column Fixed string: INDEX
2nd column and later	Data column	Data type of sampled data Output format: Data type output string [Additional information] ☞ Page 201, (2)(g) in this section
Last column	Trigger ON information column	Fixed string: TRIGGER[(trigger ON string)]*1

1 : '' is output to 'trigger ON string'.

⑤Data name row

Column number	Column name	Output data
1st column	Index column	Title of index column Fixed string: INDEX
2nd column and later	Data column	Title of data column Device or device comment
Last column	Trigger ON information column	Title of trigger occurrence information column Fixed string: Trigger

⑥Data row

Column number	Column name	Output data
1st column	Index column*1	Value of index Output format: Integer value
2nd column and later	Data column	Value of sampled device Output format: Value corresponds to the type in the data type information row
Last column	Trigger ON information column	Information at trigger occurrence

*1 : When saving the data in CSV file which is not output the index information, the index is output with continuous numbers from 1 automatically.

(g) Data type output string

The following explains the data type output string to be output to "Data row".

Data type	Data type output string	Output data
Bit	BIT	BIT[(ON string);(OFF string)] ¹
Word [unsigned]	USHORT	USHORT[DEC.0]
Word [signed]	SHORT	SHORT[DEC.0]
Double word [unsigned]	ULONG	ULONG ULONG[DEC.0]
Double word [signed]	LONG	LONG LONG[DEC.0]
FLOAT (Single Precision)	FLOAT	FLOAT[DEC.7] ²
FLOAT (Double Precision)	DOUBLE	DOUBLE[DEC.14] ²
16bit BCD ³	BCD16	BCD16[DEC.0]
32bit BCD ³	BCD32	BCD32[DEC.0]

*1 : historical trend window opened with a CSV file, a ON string and OFF string are displayed according to the information in the file. On a historical trend window opened with a binary file and a realtime trend window, a ON string = '1' and a OFF string = '0' are displayed.

*2 : The number of digits after decimal point indicates the maximum number of digits, therefore all of the specified number of digits are not always displayed. (For High Speed Data Logger Module only)
(Example) For 1.2345, '1.2345' is output, not '1.2345000'.

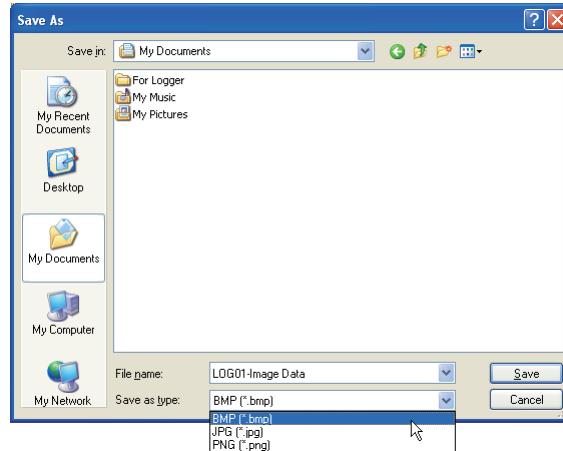
*3 : Supported by High Speed Data Logger Module only.

13.2.2 Saving displayed trend graphs to image file

A captured image of the active trend window is saved to a file.

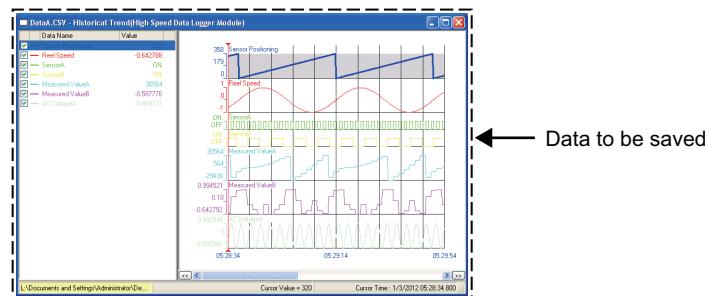
Operating procedure

1.  [File] \Rightarrow [Save As] \Rightarrow [Save Image File] ()
2. Select a file format (BMP/JPG/PNG) to be used from "Save as type".
3. Specify "File name" and click the  button.



(1) Range of data to be saved

When the  button is clicked, the image of active trend window is saved.



13.3 Saving Displayed Events

Events displayed on the active historical event window and realtime event window are saved to either following file.

- CSV file
- Image file

13.3.1 Saving displayed events to CSV file

Displayed events in the event list of active event window are saved to a CSV file.

When saving historical events, event logging names and comments are saved in a selected language.

Operating procedure

1.  [File] ⇒ [Save As] ⇒ [Save CSV File] ()
2. Enter a file name and click the  button.

(1) Data to be saved

(a) For Historical event

Events of an event logging file(s) being displayed are saved.

(b) For Realtime event

Events received from the start of monitoring to the click of the  button are saved.

(2) Format specification of CSV file

The following explains the format specification of CSV files.

Item	Description
Delimiter	, (comma)
Linefeed code	CRLF(0x0D,0x0A)
Character code	ASCII
Number of rows	Maximum 200003 rows (Data rows + 3)

(a) Output data of rows/columns

The following is an example of output data of rows/columns.

File information row	A	B	C	D	E	F	G	H
Data type information row	1	[EVENT]	1	2	3	4		
Data name row	2	DATETIMESHORT[DESTRING[32]]		SHORT[STRING[32]]	STRING[16664]			
	3	TIME	NUMBER	EVENT	STATUS	COMMENT	VALUES	
Data rows	4	58:19.0	2	Voltage error	0	Voltage restored	D1=0.731354;D10=0.000000	
	5	58:21.0	1	Sensor-detected error	1	Execution error occurred	D0=1.213192799E+30	
	6	58:22.0	1	Sensor-detected error	0	Execution restored	D0=0.000000	
	7	58:24.0	1	Sensor-detected error	1	Execution error occurred	D0=3.494843613E+18	
	8	58:26.0	1	Sensor-detected error	0	Execution restored	D0=0.000000	
	9	58:27.0	1	Sensor-detected error	1	Execution error occurred	D0=4.758394893E+27	

(b) File information row

Column number	Column name	Output data
1st column	File Type	File type of output file Fixed value: [EVENT]
2nd column	File version	Version of output file Fixed value: 1
3rd column	Row number of data type information row	Number indicating the data type information row Fixed value: 2
4th column	Row number of data name row	Number indicating the data name row Fixed value: 3
5th column	Starting row number of data rows	Starting number of data rows Fixed value: 4

(c) Data type information row

Column number	Column name	Output data
1st column	Date and time column	Data type of date and time Fixed string: DATETIME[YYYY/MM/DD hh:mm:ss]
2nd column	Microsecond column	Data type of microsecond of date and time Fixed string: [us]
3rd column	No. column	Data type of No. Fixed string: SHORT[DEC.0]
4th column	Event logging name column	Data type of event logging name Fixed string: STRING[64] ¹
5th column	Occurrence status column	Data type of occurrence status Fixed string: SHORT[DEC.0]
6th column	Occurrence comment column	Data type of occurrence comment Fixed string: STRING[64] ¹
7th column	Occurrence condition value column	Data type of occurrence condition value Fixed string: STRING[4623] ¹

*1 : A number enclosed with [] indicates the maximum number of characters (unit: byte)

(d) Data name row

Column number	Column name	Output data
1st column	Date and time column	Title of the date and time column Fixed string: TIME
2nd column	Microsecond column	Title of the microsecond column Fixed string: usec
3rd column	No. column	Title of the No. column Fixed string: NUMBER
4th column	Event logging name column	Title of the event logging column Fixed string: EVENT
5th column	Occurrence status column	Title of the occurrence status column Fixed string: STATUS
6th column	Occurrence comment column	Title of the occurrence comment column Fixed string: COMMENT
7th column	Occurrence condition value column	Title of the occurrence condition value Fixed string: VALUES

(e) Data row

For a historical event window, data are output in the order that the data are stored to a event logging file.

For a realtime event window, data are output in the order that the data are received.



The CSV file format explained in this section differs from the CSV file format obtained from LCPU or High Speed Data Logger Module. For module CSV file format, refer to the following manual.

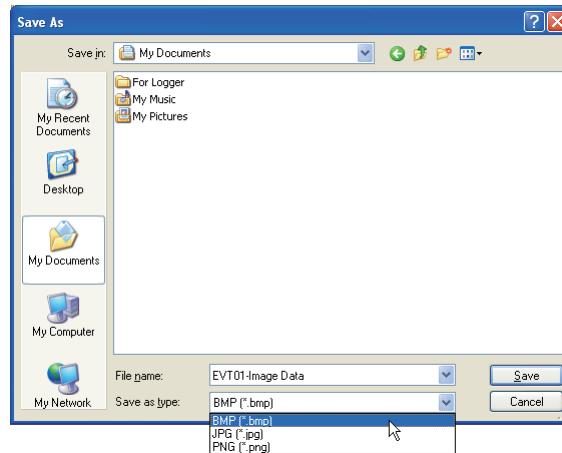
High Speed Data Logger Module User's Manual

13.3.2 Saving displayed events to image file

A captured image of the active event window is saved to a file.

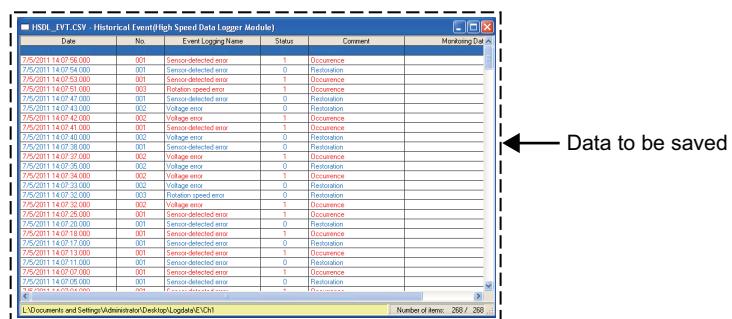
Operating procedure

1.  [File] ⇒ [Save As] ⇒ [Save Image File] ()
2. Select a file format (BMP/JPG/PNG) to be used from "Save as type".
3. Specify "File name" and click the  button.



(1) Range of data to be saved

When the  button is clicked, the image of an active event window is saved.



CHAPTER 14 PRINTING TREND GRAPHS

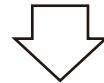
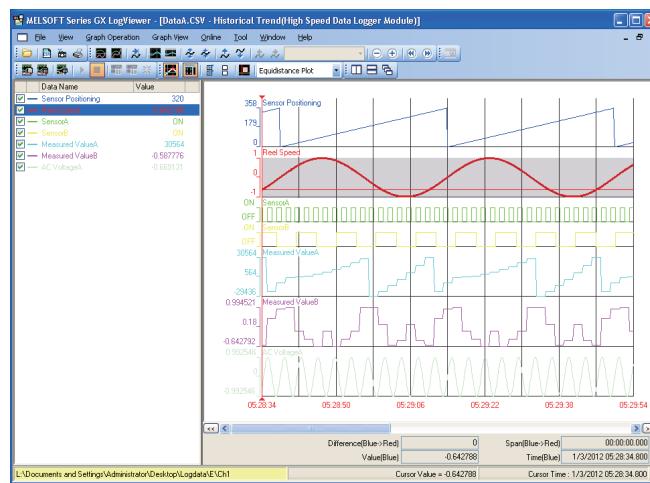
QnUDVCPU High Speed Data Logger High Speed Data Communication Q Analog LCPU L Analog

14.1 Overview

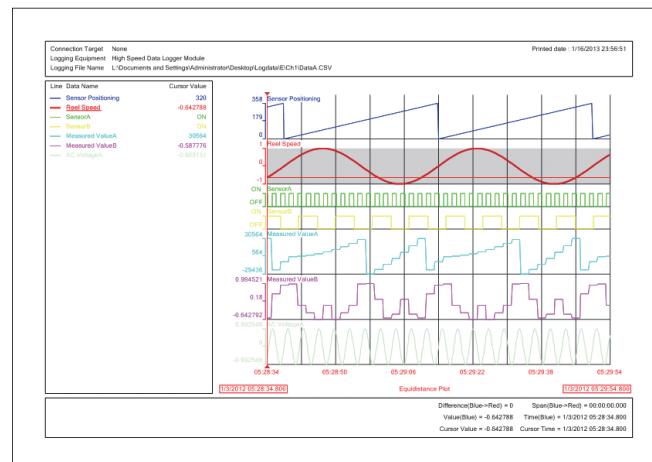
This function prints a trend graph on the screen while a realtime trend graph or historical trend graph is being displayed.

It prints a graph area and graph legend area displayed on an active trend window.

Information such as connection target, data logging name, cursor time can be also printed in a header or footer.



Print

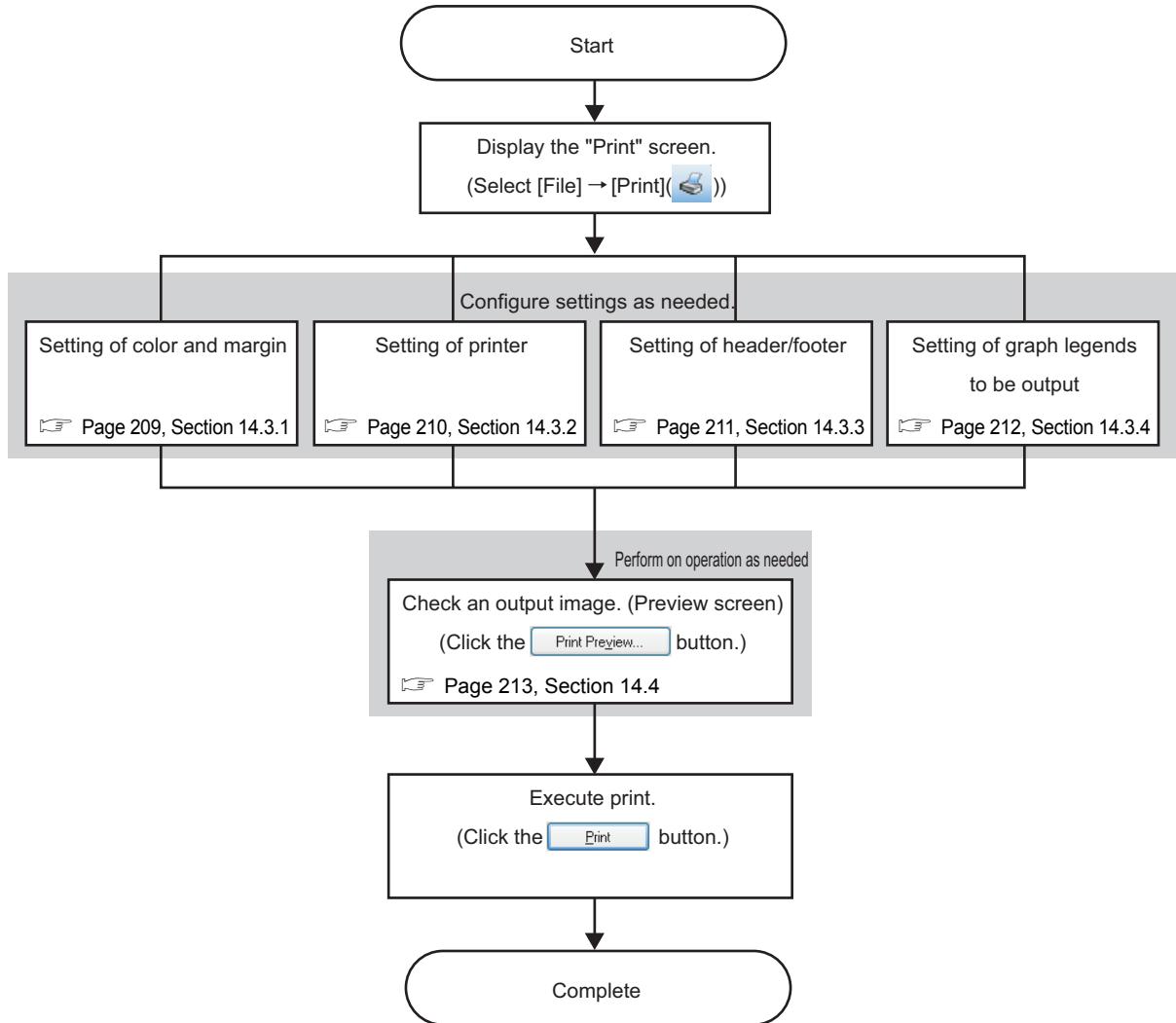


14

14.1 Overview

14.2 Flow of Print

The following figure shows the flow of printing a trend graph.



14.3 Setting Print Configuration

The following settings can be configured on the Print screen.

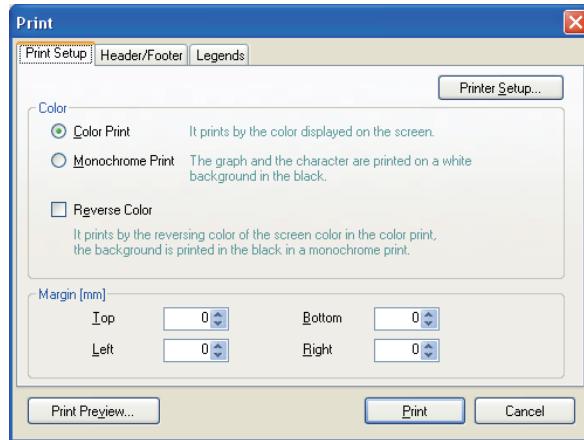
- Setting of color and margin (☞ Page 209, Section 14.3.1)
- Setting of printer (☞ Page 210, Section 14.3.2)
- Setting of header/footer (☞ Page 211, Section 14.3.3)
- Output setting of graph legends (☞ Page 212, Section 14.3.4)

14.3.1 Setting color and margin

Set the print color and margin on the <<Print Setup>> tab of the Print screen.

Screen display

☛ [File] ⇒ [Print] ()



14

Operating procedure

1. Set the items on the screen.

Item	Description	Reference
 button	Displays the screen for the printer setting.	Page 210, Section 14.3.2
Color	Select the color mode at time of printing.	-
Color Print	Select this to print graphs with the colors displayed in the graph legend area and graph area.	-
Monochrome Print	Select this to print graphs and characters in black and background in white. (Highlighted area is printed in gray.)	-
Reverse Color	Check this to print: characters and lines on the graph legend area and graphs, and background color, with their colors reversed.*1	-
Margin [mm]	Specify the print margin.	-
Top	Specify a top margin.	-
Bottom	Specify a bottom margin.	-
Left	Specify a left margin.	-
Right	Specify a right margin.	-

*1 : Colors are replaced with complementary colors. For example, red is replaced with cyan, blue is replaced with yellow, and green is replaced with magenta.

2. Click the button and check the print preview.

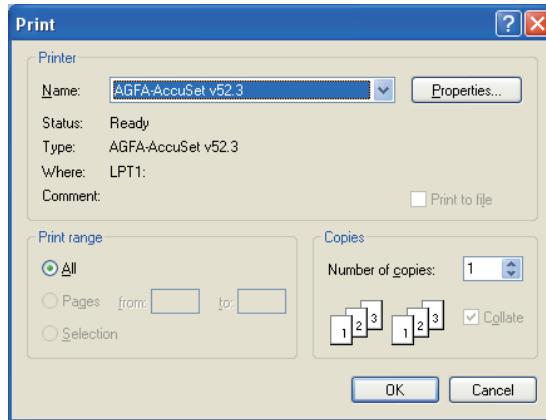
☛ Page 213, Section 14.4 Checking Print Preview

14.3.2 Setting printer

Specify a printer to execute the print and number of prints.

Screen display

Click the button on the <<Print Setup>> tab of the Print screen.



Operating procedure

1. Set the items on the screen.

Item	Description
Printer	Displays information of a printer device.
Name	Specify a printer to be used.
button	Configure the setting for the specified printer.
Print range	Specify the range to be printed.
Copies	Specify the number of copies.

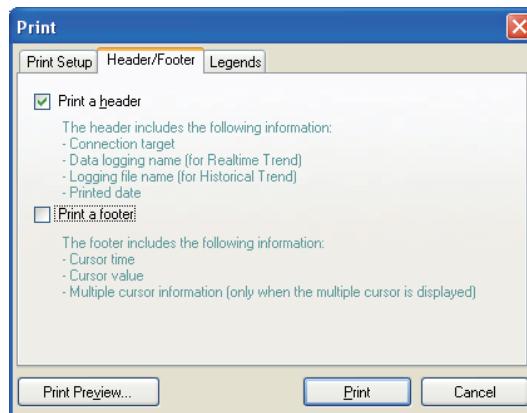
2. Click the button.

14.3.3 Setting header/footer

Set the print header and footer on the <<Header/Footer>> tab of the Print screen.

Screen display

Click the <<Header/Footer>> tab.



14

Operating procedure

1. Set the items on the screen.

Item	Description
Print a header	Check this to print the following items in a header. <ul style="list-style-type: none"> Connection target Data logging name (For Realtime trend) Logging file name (For Historical trend) Printed time
Print a footer	Check this to print the following items in a footer. <ul style="list-style-type: none"> Cursor time Cursor value Multiple cursor information (only when the multiple cursor is displayed)

2. Click the Print Preview... button and check the print preview.

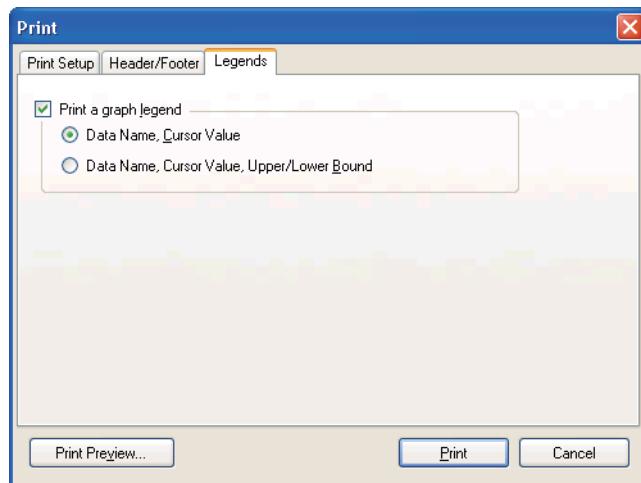
☞ Page 213, Section 14.4 Checking Print Preview

14.3.4 Setting graph legend output

Set the output contents of graph legends on the <<Legends>> tab of the Print screen.

Screen display

Click the <<Legends>> tab.



Operating procedure

1. Set the items on the screen.

Item	Description
Print a graph legend	Check this to print graph legends.
Data Name, Cursor Value	Select this to print data name and cursor value.
Data Name, Cursor Value, Upper/ Lower Bound	Select this to print data name, cursor value, and upper/lower limit display value.

2. Click the button and check the print preview.

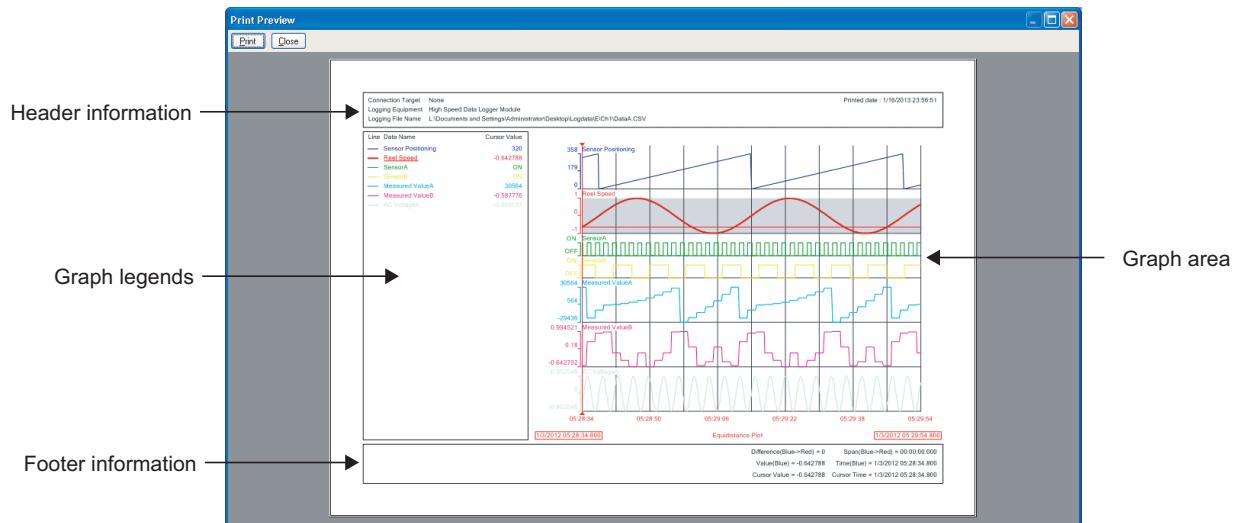
Page 213, Section 14.4 Checking Print Preview

14.4 Checking Print Preview

Check output images on the Print Preview screen.

Screen display

Click the  button on the Print screen.



14

Operating procedure

Check the output data on the Print Preview screen.

Item	Description
Header information	Displays the header information if "Print a header" is checked on the <<Header/Footer>> tab of the <u>Print</u> screen.
Graph legends	Displays information of the graph legends specified on the <<Legends>> tab of the <u>Print</u> screen.
Graph area	Displays the graph area of Historical trend or Realtime trend.
Graph area	Displays the sampling start time at a lower left, plot display format at a lower center, and sampling end time at a lower right.
Footer information	Displays the footer information if "Print a footer" is checked on the <<Header/Footer>> tab of the <u>Print</u> screen.

Screen button

Item	Description
 button	Prints contents being displayed on the <u>Print Preview</u> screen.
 button	Closes the screen.

CHAPTER 15 HELP MENU

QnUDVCPU **High Speed Data Logger** **High Speed Data Communication** **Q Analog** **LCPU** **L Analog**

15.1 Opening Manual

This function opens the operating manual of GX LogViewer.

Operating procedure



[Help] ⇒ [Open Manual]

15.2 Version Information

This function displays the version information of GX LogViewer.

Operating procedure



[Help] ⇒ [About GX LogViewer]

CHAPTER 16 TROUBLESHOOTING

This chapter explains the errors which may occur when using GX LogViewer, and corrective actions correspond to those errors.

QnUDVCPU **High Speed Data Logger** **High Speed Data Communication** **Q Analog** **LCPU** **L Analog**

Symptom	Check point	Corrective action
Cannot communicate with the module. (Cannot operate online)	Is there a disconnection along the connection route?	<ul style="list-style-type: none"> Connect the cables properly. Replace the cable with new one.
	Is the IP address duplicated?	<ul style="list-style-type: none"> Correct the IP address.
	Does a firewall or proxy server exist along the connection route?	<ul style="list-style-type: none"> Ask your network administrator about the firewall and proxy server settings.
	Is Windows firewall enabled on the personal computer?	<ul style="list-style-type: none"> Disable Windows firewall on the personal computer when using the module search function or direct connection.
	Is antivirus software blocking Ethernet communications?	<ul style="list-style-type: none"> Change the antivirus software settings to allow Ethernet communications. Lower the antivirus software's security setting level. Stop the antivirus software.
	Is there any problem on the personal computer?	<ul style="list-style-type: none"> Replace it with another personal computer.
	Are the authorities of the user logged on to Windows® sufficient?	<ul style="list-style-type: none"> For Windows® XP, logon as a user with a 'limited' or higher user account. For Windows Vista®, Windows® 7, and Windows® 8 logon as a user with a 'standard' or higher user account.
	Are multiple IP addresses enabled at the same time on the personal computer side?	<ul style="list-style-type: none"> For a direct connection, make sure multiple IP addresses are not enabled at the same time on the personal computer. For a direct connection, enable the wireless LAN function.
	Is Direct Connection specified for Transfer Setup of High Speed Data Logger Module and High Speed Data Communication Module?	<ul style="list-style-type: none"> For a direct connection, connect a High Speed Data Logger Module, High Speed Data Communication Module, and a personal computer one to one. <p> Page 25, Section 2.3.3</p>
An error message is displayed when opening a logging file.	Is the logging file with only header line displayed?	<ul style="list-style-type: none"> After outputting the data, open the storage file.
	Is the logging file corrupted?	<ul style="list-style-type: none"> Check the file.
A dashed-dotted line is displayed.	Has missing data occurred?  Page 149, Section 9.11	<ul style="list-style-type: none"> Correct the data logging setting on the configuration tool to prevent the occurrence of missing data.
A dashed-dotted line is displayed on the realtime trend window.	Is logging of data displayed on the realtime trend window stopped because the number of saved files exceeded?	<ul style="list-style-type: none"> Delete the unnecessary saved files using the configuration tool, and restart the data logging.
A process of "Open Logging File" or "Save Logging File to PC" function is slow.	Is Ethernet connected?	<ul style="list-style-type: none"> The TCP connection is recommended for the Ethernet connection since a longer processing time is required for "Open Logging File" or "Save Logging File to PC" function when using the Ethernet direct connection or the UDP connection.

When an abnormality exists in a module, functions of GX LogViewer may not be performed normally.

For details of troubleshooting, refer to the user's manual of each CPU.

APPENDIX

Appendix 1 USB Driver Installation

In order to communicate with a programmable controller CPU via USB, a USB driver needs to be installed.

The following explains the USB driver installation procedure for Windows® XP, Windows Vista®, Windows® 7, or Windows® 8.

Point

When two or more MELSOFT products are installed, the USB driver is installed in the folder to which the first MELSOFT product is installed. This section explains using the USB driver installation destination folder: C:\Program Files\ MELSOFT\Easysocket\USBdrivers, as an example.

(1) Windows® XP

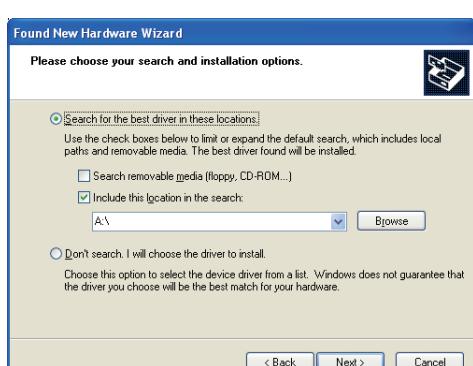
The following explains the procedure of USB driver installation for Windows® XP.

Operating procedure



1. **Connect the personal computer and the programmable controller CPU with USB cable, and then turn on the programmable controller CPU.**
→ The screen shown on the left is displayed.

2. **Select "Install from a list or specific location [Advanced]" and click the  button.**

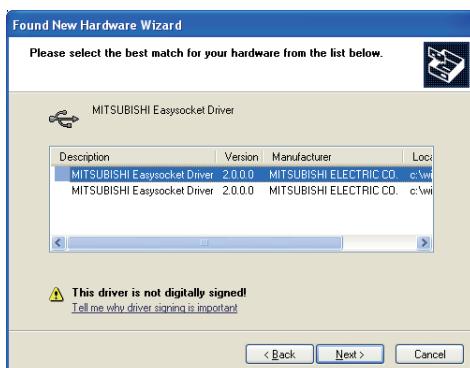


3. **Select "Search for the best driver in these locations", and check "Include this location in the search".**

4. **Click the  button.**

To the next page

From the previous page



Installation complete

5. Select the USB driver installation destination folder, select [Easysocket] → [USBDrivers], and click the **OK button.**

OK

6. Select "MITSUBISHI Easysocket Driver", and click the **Next > button.**

Next >

7. Click the **Continue Anyway button.**

Continue Anyway

The screen shown on the left is displayed and the USB driver installation is complete.

8. Click the **Finish button to close the window.**

Finish

Point

If the USB driver cannot be installed, confirm the following settings.

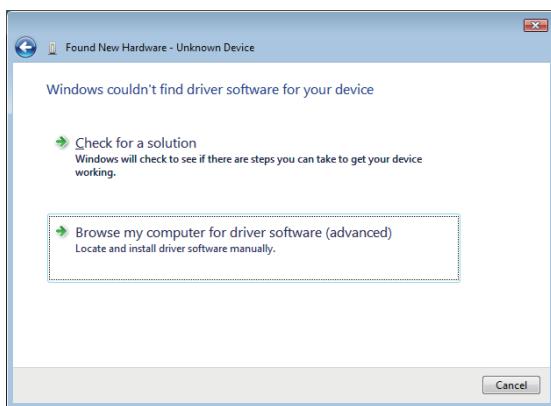
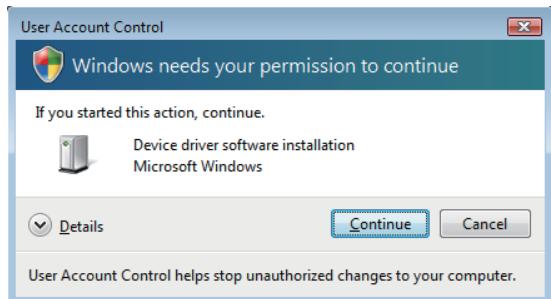
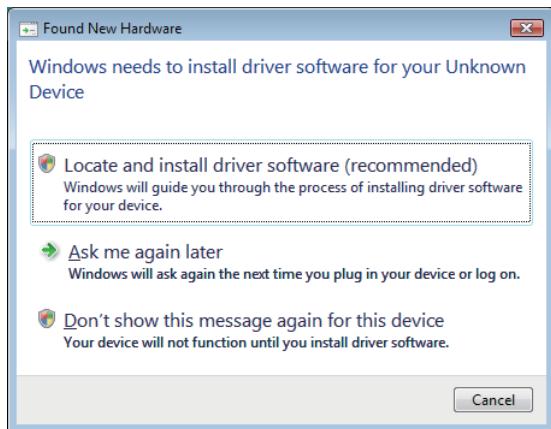
If "Block - Never install unsigned driver software" is selected under [Control Panel] - [System] - [Hardware] - [Driver Signing], the USB driver may not be installed.

Select "Ignore - Install the software anyway and don't ask for my approval", or "Warn - Prompt me each time to choose an action" in [Driver Signing], and execute the USB driver installation.

(2) Windows Vista®

The following explains the procedure of USB driver installation for Windows Vista®.

Operating procedure



To the next page

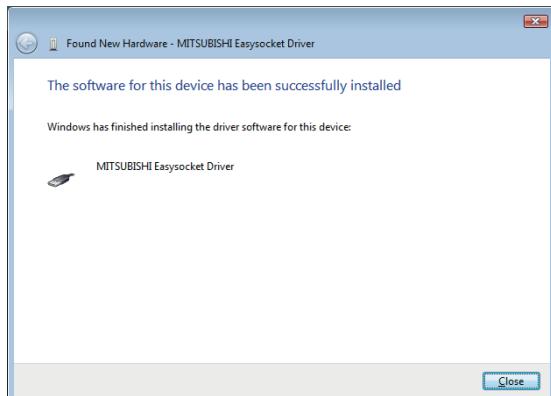
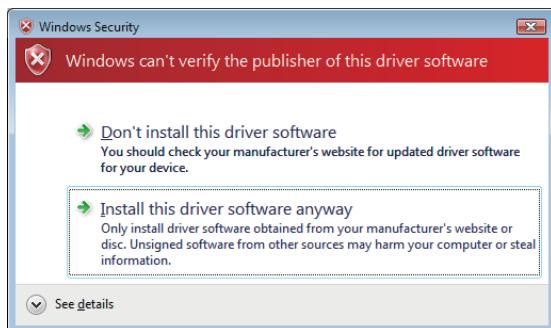
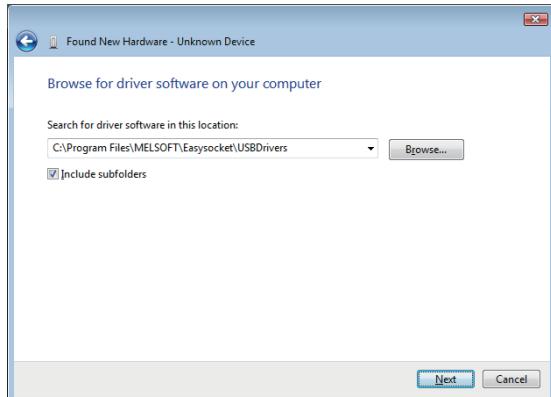
1. **Connect the personal computer and the programmable controller CPU with USB cable, and then turn on the programmable controller CPU.**
→ The screen shown on the left is displayed.

2. **Select "Locate and install driver software (recommended)" and wait for a search to finish.**

3. **When User Account Control is turned ON, the screen shown on the left is displayed. Click the Continue button.**

4. **Select "Browse my computer for driver software (advanced)".**

From the previous page



Installation complete

5. Specify "Easysocket\USBdrivers", and click the **Next button.**

Next

6. Select "Install this driver software anyway".

The screen shown on the left is displayed, and the USB driver installation is complete.

7. Click the **Close button.**

Close

(3) Windows® 7 and Windows® 8

The following explains the procedure of USB driver installation for Windows® 7 and Windows® 8.

Operating procedure



1. Connect the personal computer and the programmable controller CPU with USB cable, and then turn on the programmable controller CPU.

<When using Windows® 7>

→ The screen shown on the left is displayed.

<When using Windows® 8>

→ The screen shown on the left is not displayed.



2. Select "System and Security" from the Control Panel.

(To display the Control Panel, select [Start]

→ [Control Panel].)

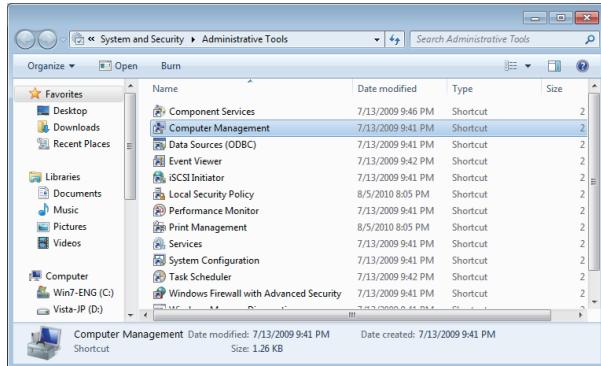


3. Select "Administrative Tools".

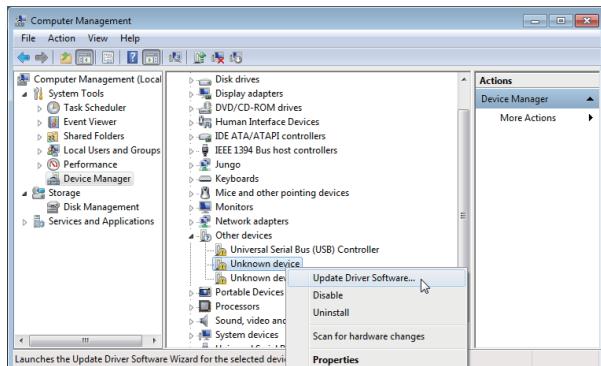


To the next page

From the previous page



4. Select "Computer Management" and double-click it.

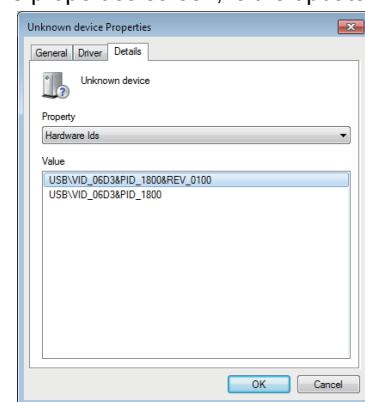


5. Right click "Unknown device" in Device Manager, and select "Update Driver Software".

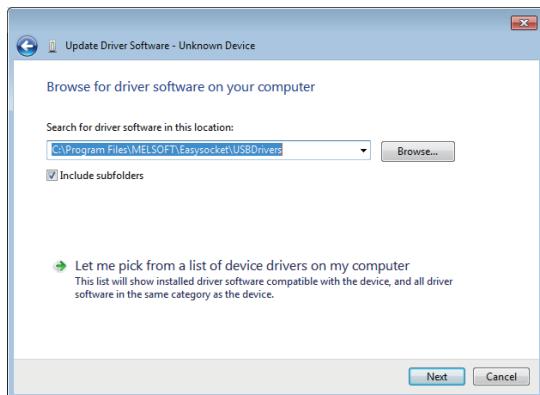
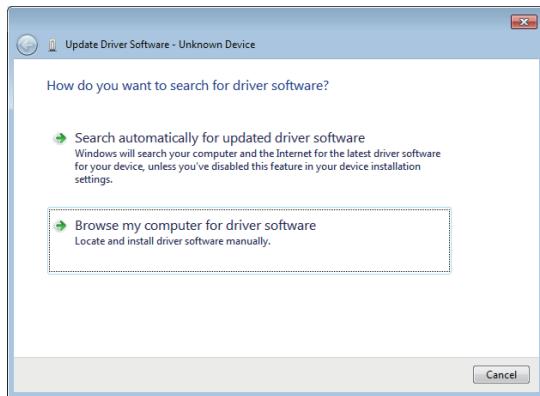
If multiple "Unknown devices" exist therefore cannot be specified, right-click "Unknown device" and select "Properties". The "Unknown device", whose "Hardware Ids" is "USB\VID_06D3&PID_1800" on the <<Details>> tab of the properties screen, is the update target.



To the next page



From the previous page



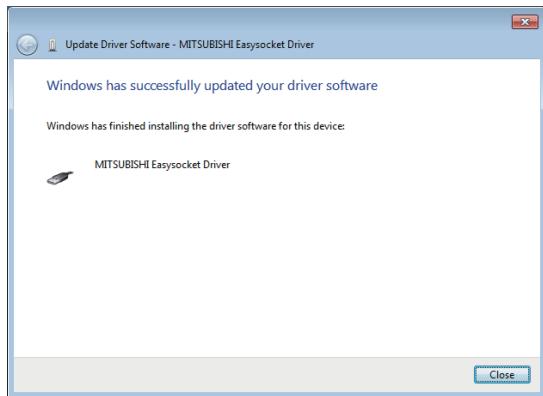
To the next page

6. Select "Browse my computer for driver software".

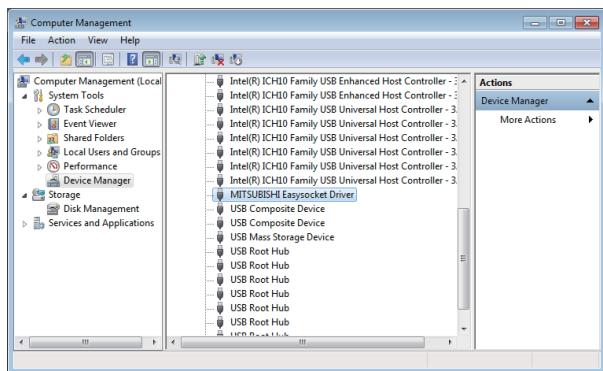
7. Specify "Easysocket\USBdrivers", and click the **Next button.**

8. Click the **Install button.**

From the previous page



9. Click the button.



10. "MITSUBISHI Easysocket Driver" is registered under "Universal Serial Bus controllers".



Installation complete

Appendix 2 Added and Changed Functions

The following are added and changed functions in GX LogViewer and applicable software version.

Added/Changed function	Applicable software version	Reference
Display of data which contains the following language is supported. • Chinese Simplified • English • Japanese	1.04E or later	Page 137, Section 9.6.6 Page 166, Section 10.4.3
Display of data which contains the following language and character code is supported. • Chinese Traditional • Korean • Unicode (UTF-8)	1.07H or later	Page 56, Section 6.3 Page 137, Section 9.6.6 Page 166, Section 10.4.3
The jump cursor function can be executed by searching value.	1.10L or later	Page 117, Section 9.5.4 (1)
Display of data logged by the following modules is supported. • MELSEC-Q High Speed Analog-Digital Converter Module (Q64ADH) • MELSEC-Q Current Transformer Input Module (Q68CT) • MELSEC-L Analog-Digital Converter Module (L60AD4)	1.18U or later	Page 18, CHAPTER 2
Display of time scale label is supported.		Page 137, Section 9.6.5
The automatic reflection of the graph display setting when displayed trend window is supported.		Page 148, Section 9.9
Initializing graph display of the trend graph being displayed is supported.		Page 148, Section 9.10
Expand the maximum display point of the trend graph on one screen from 65535 to 100000, and the maximum save number of lines to the CSV file from 131073 to 200003 (data row+3).	1.26C or later	Page 184, Section 13.2.1
The plot format of the historical trend graph being displayed can be changed from equidistance plot format, which is conventional display format, to time interval plot format.		Page 136, Section 9.6.4
When displaying with time interval plot format, logging data of another file can be added to the trend graph being displayed.		Page 108, Section 9.4.2
When displaying multiple file logging data on the trend graph, the graph can be moved to left or right.		Page 127, Section 9.5.7
Display of GX LogViewer format sampling trace data saved with GX Works2 Version 1.91V or later is supported.		Page 51, Section 5.5
Display of data logged by the following modules is supported. • QCPU (Q03UDVCPU, Q04UDVCPU, Q06UDVCPU, Q13UDVCPU, Q26UDVCPU) • LCPU (L06CPU, L26CPU) • MELSEC-L Analog-Digital Converter Module (L60AD4-2GH)		-
Windows®8 is supported.		Page 32, Section 4.2
The transparent function of GOT2000 is supported.	1.32J or later	Page 216, Appendix 1
Display of data logged by the following modules is supported. • LCPU (L06CPU-P, L26CPU-P) • MELSEC-L Analog Input/Output Module (L60AD2DA2) • High Speed Data Communication Module (QJ71DC96) • Logging Unit for Energy Measuring Unit (EcoMonitorLight) (EMU4-LM)		Page 22, Section 2.2.2 (3) -

Appendix 3 Usable Characters

This section shows the characters which can be used in the setting items.

Appendix 3.1 Usable ASCII characters

The shaded portion can be used.

If entering of unusable characters is attempted, they cannot be entered in the entry field or there will be an error after entering them.

	0	1	2	3	4	5	6	7
0	NULL		(SP) ^{*1}	0	@	P	'	p
1			!	1	A	Q	a	q
2			"	2	B	R	b	r
3			#	3	C	S	c	s
4			\$	4	D	T	d	t
5			%	5	E	U	e	u
6			&	6	F	V	f	v
7			'	7	G	W	g	w
8			(	8	H	X	h	x
9			)	9	I	Y	i	y
A			*	:	J	Z	j	z
B			+	;	K	[	k	{
C			,	<	L	\	l	|
D			-	=	M	]	m	}
E			.	>	N	^	n	~
F			/	?	O	_	o	

The following table shows the usable characters for the specific settings.

Settings	Location	Corresponding ASCII character																
		(SP) *1	"	'	*	+	,	/	:	;	<	>	?	[	\	\]	l	.
Directory	Logging File Save Function	×	×	○	×	×	×	○	×	×	×	×	×	○	×	○	×	○
Menu name to be added	Frequently-Used Window Configurations	○	×	○	×	○	○	×	×	○	×	×	×	○	×	○	×	○

○: Usable ×: Not usable

*1 : (SP) indicates a space.

Appendix 3.2 Characters usable in file names, folder (directory) names

The shaded portion can be used.

	0	1	2	3	4	5	6	7
0	NULL		(SP) ^{*1}	0	@	P	`	p
1			!	1	A	Q	a	q
2			"	2	B	R	b	r
3			#	3	C	S	c	s
4			\$	4	D	T	d	t
5			%	5	E	U	e	u
6			&	6	F	V	f	v
7			'	7	G	W	g	w
8			(	8	H	X	h	x
9			)	9	I	Y	i	y
A			*	:	J	Z	j	z
B			+	:	K	[	k	{
C			,	<	L	\	l	|
D			-	=	M	]	m	}
E			.	>	N	^	n	~
F			/	?	O	_	o	

*1 : (SP) indicates a space.

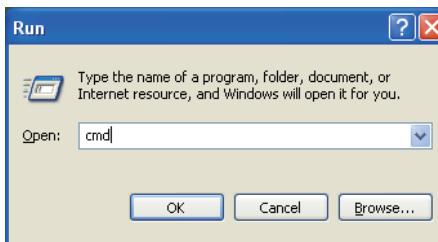
Appendix 4 PING Test

This section shows the example for checking the connection by issuing the PING command to the module from an external device (DOS/V personal computer) connected on the same Ethernet network (LAN).

(Example of checking the connection of the High Speed Data Logger Module/the High Speed Data Communication Module with an external device on the same network address)

Operating procedure

1. Select [Start] ⇒ [Run] on the Windows menu, enter 'cmd' and click the  button.



2. Using the keyboard, enter the IP address of the High Speed Data Logger Module/the High Speed Data Communication Module after 'ping'.

Example

```
>ping 192.168.3.3
```

3. Check the output result.

(a) When the communication was successful

```
>ping 192.168.3.3
Pinging 192.168.3.3 with 32 bytes of data:

Reply from 192.168.3.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.3.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

(b) When the communication was unsuccessful

```
>ping 192.168.3.3
Pinging 192.168.3.3 with 32 bytes of data:
Request timed out.

Ping statistics for 192.168.3.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

When the communication was unsuccessful, check the following items and perform the PING test again.

- Network settings for the High Speed Data Logger Module/the High Speed Data Communication Module or external device
- Cables, hub connection status, power status

Point

The PING test is only valid when the transfer setup method is "Connection via hub".
It is invalid when the transfer setup method is "Direct Connection".

INDEX

A

ASSISTANT FUNCTION 64

B

Blue cursor 134
Boards 23

C

color 138,171
Connect via hub 25
CSV file 184,203
cursor labels 135
cursors 106

D

Difference information area 93
Direct Connection 25,74,82,86

E

Equidistance plot 136
Event Properties 171

F

Filtering 163

G

Graph area 92
Graph Legend Area 91,108
Graph Properties 138
Graphical Display Settings 144

H

Historical event 158
Historical trend 96

I

image file 202,206
Index 94,137
Inf 151
IP Address 76,79,83

J

Jump cursor 116

M

Missing Data 149

Multiple cursor 134

N

NaN 151
next events 169
next graph 132

P

previous events 167
previous graph 130
Print 207

R

Realtime event 161
Realtime trend 101

S

Sampling trace data 51
Save 174
Set Language 137,166
Sort 165
Status bar 95,157

T

Time interval plot 136
Time Label 137
time scale labels 137
Transfer Setup 74,83

U

Upper/lower limit display value 123
USB Driver 216

REVISIONS

*The manual number is given on the bottom left of the back cover.

Print date	*Manual number	Revision
Jan., 2010	SH-080915ENG-A	First edition
Aug., 2010	SH-080915ENG-B	<p>Addition Section 9.6.5, Section 9.7.1 to 9.7.3, Section 10.4.3, Appendix 2</p> <p>Partial correction Section 2.1, Section 2.2, Section 2.4, Chapter 3, Section 4.2.1, Section 4.2.2, Section 4.3, Section 4.3.1, Section 4.3.2, Section 5.1.1 to 5.1.3, Section 6.2, Section 6.3, Section 7.2, Section 8.1, Chapter 9, Section 9.1, Section 9.2.2, Section 9.3, Section 9.3.1 to 9.3.3, Section 9.4.1, Section 9.5, Section 9.5.4, Section 9.5.6, Section 9.6, Section 9.6.1, Section 9.6.2, Section 9.6.4, Section 9.8, Section 9.9, Chapter 10, Section 10.1, Section 10.3, Section 10.3.1 to 10.3.3, Section 10.4, Section 10.5, Chapter 11, Chapter 12, Section 12.1 to 12.6, Chapter 13, Section 13.2, Section 13.2.1, Section 13.2.2, Section 13.3, Section 13.3.1, Section 13.3.2, Chapter 14, Section 14.3, Section 14.3.1 to 14.3.4, Chapter 15, Chapter 16, Appendix 1</p> <p>Section 9.6 to 9.11 → Section 9.5 to 9.10, Section 9.7.3 to 9.7.4 → Section 9.7.2 to 9.7.3, Section 9.7.5 to 9.7.6 → Section 9.6.3 to 9.6.4, Chapter 14 to 17 → Chapter 13 to 16, Section 10.4.1 → Section 10.4.2, Section 10.4.2 → Section 10.4.1, Appendix 2 to 3 → Appendix 3 to 4</p> <p>Delete Section 9.5, Section 9.7.3, Section 9.7.4, Chapter 13</p>
Sep., 2010	SH-080915ENG-C	<p>Partial correction GENERIC TERMS AND ABBREVIATIONS, Section 2.4, Section 4.2.1, Section 4.2.2, Section 8.2.2, Chapter 14, Appendix 1, Appendix 2</p>
Dec., 2010	SH-080915ENG-D	<p>Partial correction Section 2.4, Section 6.3, Section 9.6.5, Section 10.4.3, Appendix 2</p>
Apr., 2011	SH-080915ENG-E	<p>The content of Section 2.4 Operating Environment is moved and stored with the files of the installer. [For English version software] Operating Environment for GX LogViewer Version 1 (English Version) (BCN-P5879) [For Chinese version software] GX LogViewer Version 1 简体中文版运行环境 (BCN-P5874)</p> <p>Partial correction Section 2.4, Section 6.3, Appendix 2</p>
Jul., 2011	SH-080915ENG-F	<p>Addition Section 2.1.3, Section 8.2.1, Section 8.3.1</p> <p>Partial correction TERMS, Chapter 2, Section 2.1.1, Section 2.2.1, Section 2.2.3, Chapter 3, Section 4.2.1, Section 5.1.1 to 5.1.3, Section 5.2.1 to 5.2.3, Section 6.2 to 6.4, Section 7.1 to 7.2, Section 8.1, Section 8.2.2, Section 8.3.3, Section 9.1, Section 9.2.1, Section 9.2.3, Section 9.2.5, Section 9.3.1, Section 9.5.4, Section 9.5.9, Section 10.1, Section 10.2.1, Section 10.2.3, Chapter 11, Section 12.1, Section 13.2.1, Section 14.3.4, Appendix 2</p> <p>Section 2.1 to Section 2.2 → Section 2.2 to Section 2.1, Section 5.1 to Section 5.2 → Section 5.2 to Section 5.1, Section 8.2 to Section 8.3 → Section 8.3 to Section 8.2</p> <p>Delete GENERIC TERMS AND ABBREVIATIONS, Section 1.1.1 to 1.1.3</p>

Print date	*Manual number	Revision
Jan., 2012	SH-080915ENG-G	<p>Addition Section 2.4, Section 9.8, Section 9.9, Section 9.10</p> <p>Partial correction TERMS, Section 1.1, Section 1.2, Chapter 2, Section 2.2.1 to Section 2.2.3, Section 2.4.1, Chapter 3, Section 4.2.1, Chapter 5, Section 5.1, Section 5.1.1, Section 5.2, Section 5.2.1 to Section 5.2.3, Section 6.2.3, Section 6.3, Section 7.1, Section 7.2, Section 8.1, Section 9.1, Section 9.2.3, Section 9.2.5, Section 9.3.1, Section 9.5, Section 9.6, Section 9.6.4, Section 9.7, Chapter 11, Chapter 12, Section 12.1 to Section 12.4, Section 13.2.1, Chapter 16, Appendix 2 Section 2.4 → Section 2.1, Section 2.1 to Section 2.3 → Section 2.2 to Section 2.4, Section 9.6.4 → Section 9.6.3, Section 9.6.3 → Section 9.6.4, Section 12.5 → Section 9.8, Section 9.8 to Section 9.10 → Section 9.11 to Section 9.13</p> <p>Delete Section 12.6</p>
Feb., 2013	SH-080915ENG-H	<p>Addition Section 5.3, Section 7.2.1, Section 7.2.2, Section 9.6.4</p> <p>Partial correction TERMS, Section 1.1, Section 1.2, Chapter 2, Section 2.2.1, Chapter 2.3, Section 2.3.1, Section 2.4, Section 2.4.1, Section 2.4.2, Section 2.4.3, Chapter 3, Section 4.3.2, Chapter 5, Section 5.1.1, Section 5.2, Section 5.2.1, Section 6.1, Section 6.2, Section 6.3, Section 6.4, Section 7.1, Section 8.1, Section 9.1, Section 9.2.1, Section 9.2.2, Section 9.2.4, Section 9.2.5, Section 9.3.1, Section 9.4, Section 9.4.1, Section 9.4.2, Section 9.5, Section 9.5.4, Section 9.5.7, Section 9.5.9, Section 9.6, Section 9.7.1, Section 9.8, Section 9.11, Section 10.1, Section 10.2.1, Section 10.3.1, Chapter 11, Section 12.1, Section 12.2, Section 12.4, Section 13.2.1, Section 13.2.2, Section 13.3.1, Section 13.3.2, Section 14.1, Section 14.4, Section 15.2, Appendix 2 Section 5.3 to Section 5.4 → Section 5.4 to Section 5.5 Section 9.6.4 to Section 9.6.5 → Section 9.6.5 to Section 9.6.6</p>
Oct., 2013	SH-080915ENG-I	<p>Addition Section 5.3, Section 5.4, Section 8.4</p> <p>Partial correction RELATED MANUALS, HOW TO READ THIS MANUAL, TERMS, Section 1.1, Chapter 2, Section 2.1, Section 2.2, Section 2.2.2, Chapter 2.3, Section 2.3.1, Section 2.3.2, Section 2.3.3, Section 2.4, Section 2.5, Chapter 3, Section 4.2, Section 4.2.1, Section 4.2.2, Chapter 5, Section 5.1.1, Section 5.1.2, Section 5.1.3, Section 5.2.1, Section 5.2.2, Section 5.2.3, Section 5.6, Section 5.7, Chapter 6, Section 6.2, Section 6.3, Chapter 7, Section 7.1, Section 7.2.1, Section 7.2.2, Section 8.1, Section 8.2, Section 8.2.1, Section 8.2.3, Section 8.3, Section 8.3.1, Section 8.3.2, Section 8.3.4, Section 8.4, Section 8.4.1, Section 8.4.2, Section 8.4.4, Section 9.1, Section 9.2, Section 9.2.5, Section 9.3.1, Section 9.3.2, Section 9.3.3, Section 9.4, Section 9.5, Section 9.5.9, Section 9.6, Section 9.7, Section 9.8, Section 9.9, Section 9.10, Section 9.11, Section 9.12, Section 9.13, Chapter 10, Chapter 11, Chapter 12, Chapter 13, Section 13.1, Section 13.2.1, Chapter 14, Chapter 15, Chapter 16, Appendix 1, Appendix 2, Appendix 4 Section 2.3 → Section 2.2 Section 5.2 → Section 5.1</p>

Japanese Manual Version SH-080887-M

This manual confers no industrial rights or any rights of any other kind, nor does it confer any patent licenses.

Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

Microsoft, Windows, Windows NT, Windows Vista are registered trademarks of Microsoft Corporation in the United States and other countries.

Ethernet is a trademark of Xerox Corporation.

CompactFlash is a registered trademark of SanDisk Corporation in the United States and other countries.

The SD logo and the SDHC logo are trademarks.

All other company names and product names used in this manual are trademarks or registered trademarks of their respective companies.



GX LogViewer Version 1

Operating Manual

MODEL	SW1DNN-VIEWER-O-E
MODEL CODE	13JU68
SH(NA)-080915ENG-I(1310)KWIX	



HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN
NAGOYA WORKS : 1-14, YADA-MINAMI 5-CHOME, HIGASHI-KU, NAGOYA, JAPAN

When exported from Japan, this manual does not require application to the
Ministry of Economy, Trade and Industry for service transaction permission.

Specifications subject to change without notice.